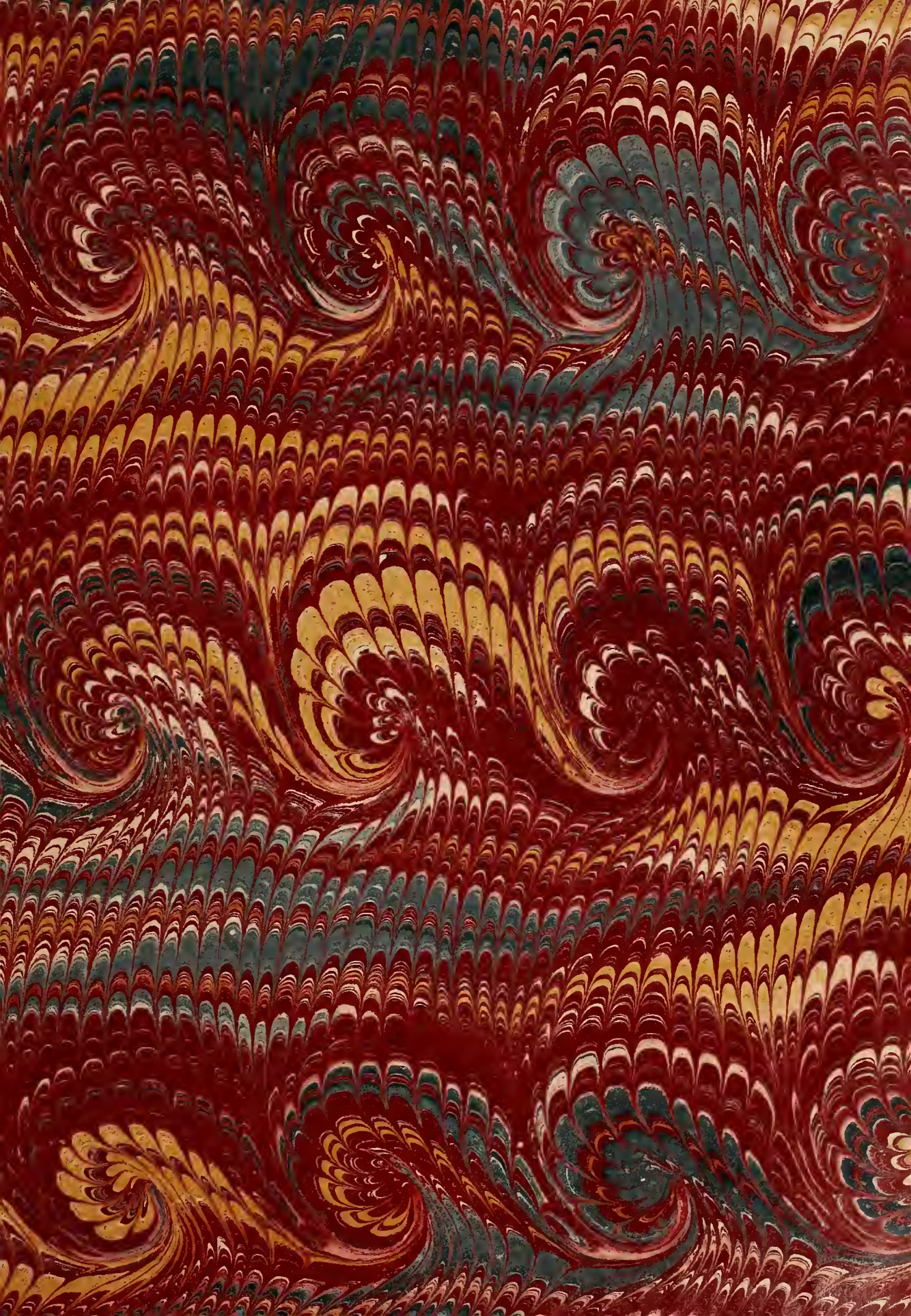
XJ .0912

SCIENTIA
SALUT
POPULIQUE
LIBRARY OF
THE NEW YORK BOTANICAL GARDEN
Special Book Fund
1910
Septemb 1897
R W Gibson Invt



THE

JOURNAL OF HORTICULTURE,

COTTAGE GARDENER,

AND

COUNTRY GENTLEMAN.

A MAGAZINE OF GARDENING, RURAL AND DOMESTIC ECONOMY, BOTANY, AND NATURAL HISTORY.

CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S., AND ROBERT HOGG, LL.D.

THE FRUIT AND KITCHEN GARDENS, by Mr. J. Robson, Gardener to Viscount Holmesdale, M.P., Linton Park; and Mr. T. Weaver, Gardener to the Warden of Winchester College.

THE FLOWER GARDEN, by Mr. G. Abbey, Stansty Hall; and Mr. J. Wills, Gardener at Huntreyde Park, Burnley.

STOVE, GREENHOUSE, and WINDOW GARDEN, by Mr. R. Fish, Gardener, Putteridge Bury, near Luton.

FLORISTS' FLOWERS AND FLORICULTURE, by the Rev. H. H. Dombrain.

GARDENING CALENDAR, by Mr. William Keane.

POULTRY-KEEPING, by Mr. J. Baily, Rev. W. W. Wingfield, E. Hewitt, Esq., and other well-known contributors.

BEE-KEEPING, by H. Taylor, Esq.; T. W. Woodbury, Esq. "B. & W.;" and Mr. S. Bevan Fox.

HOUSEHOLD ARTS, by the Authoress of "My Flowers," and others.

LIBRARY
NEW YORK
BOTANICAL
GARDEN.

VOLUME XII., NEW SERIES.

VOL. XXXVII., OLD SERIES.

LONDON:

PUBLISHED FOR THE PROPRIETORS, 171, FLEET STREET.

1867.

XJ
.L912.
Jan Jones
1867

LONDON:
PRINTED AT THE JOURNAL OF HORTICULTURE OFFICE,
171, FLEET STREET.

TO OUR READERS.

THERE are periods when "we would not if we could be gay," and this is one of them. We have had to assort the letters accumulated during many years; and as they were perused and placed aside, the picture seemed realised of the old soldier returned to his boyhood's home, and, as he stood within its open door, the admitted breeze

> "Caught the old dangling almanacks behind,
> And up they flew like banners in the wind;
> Then gently, singly—down—down—down they went,
> And told of twenty years irrevocably spent."

Each almanack in that series recalled events—some craped, some golden—and so was it with our letters of years gone by. Many from friends now busied with life's sterner employments; others from those who have adopted "a home across the waters;" and not a few from Beaton, and Errington, and Chitty, and Payne, and others whose life's work is finished.

Now, though we would not be gay, yet we have yielded to this train of thought, because we can add a record of those characteristics of life—merciful compensations. Many pens that enriched our earliest numbers still add value to those now current. Many pens that once were active for us in "the old country" still afford us aid—novel aid—from Canada, Australia, New Zealand, and even the Isles of the Pacific; and still more numerous year by year are the fresh pens ably employed to add value to our columns.

When we laid down the last of the accumulated letters of bygone years we observed, "What kindly feeling pervades them all!" That sentence is now endorsed on each bundle; and when at the end of future years we have to assort a fresh accumulation of letters, we have no fear that the same sentence will not be appropriate, for all continue to be like spirited to those from which we give these two extracts:—

"*Canada West.*—Your kind and genial letter gladdened the heart of myself and wife more than anything in the epistolary line ever received by us. Its thoroughly English tone and fraternal good wishes were particularly enjoyable, and, withal, very seasonable; for on the day of its receipt I was rather downhearted after discovering the fearful havoc made by those pests, field mice, among our young trees. We should be indeed dull without the weekly gleams of sunshine brought by "our Journal;" but the additional warmth produced by your note will long be maintained.

"I trust that before long we may have the pleasure of shaking hands personally, although now we can do so across the water. The idea, too, that my little scrawl will please "WILTSHIRE RECTOR" will, in our eyes, give increased value to his ever-welcome contributions. On the day of the arrival of your letter another inspiriting event occurred in our establishment. Some days previously, while in the bush, as it is here termed, I discovered under the snow a small Hepatica, which I *chopped* out of its frozen surroundings and brought into the house, and after thawing it out, potted it. On the day above named it opened the first blossom, and I can assure you it is as highly prized as the first Orchid in a great establishment."

The other extract, from a letter signed "A POOR WORKING MAN," is as follows:—

"The kindest thanks of myself and all my fellow working men are due to all those who have kindly interested themselves in promoting, by their writings in your Journal, the instruction and comfort of the working man. All honour to the noble band. May they live to write, and see the fruits of their labours in the improved condition, both moral and social, of the poor and often neglected sons and daughters of toil."

Every reader will join with us in chorusing that gratifying, cheering wish. We retain the aid of that "noble band;" therefore we renew our advance cheerily. Yet there must occur some oversights, so for our future volumes we will employ the words of the old herbalist Gerarde —"Accept them, loving countreymen, as tokens of our good will; and we trust that the best and well-minded wil not rashly condemne us, although some things have passed worthy reprehension."

INDEX.

Acacias, Farnesiana, 53; platyptera after blooming, 109; soil for, 169
Accrington Poultry Show, 270
Achimenes—and Tydæa, 53; culture, 110; growing specimen, 184; list of, 348; liquid manure for, 453
Acrophyllum venosum culture, 452
Agave schidigera, 360
Agricultural (Royal), Society's Poultry Show, 1-2, 309; Show at Bury, 349
Allamanda starting, 54
Aloysia citriodora cuttings, 381
Alston Poultry Show, 37
Alum-crystallised flowers, 429
Alyssum, Sweet, for edging, 152
Amaranthus melancholicus ruber culture, 414
Amaryllis Adonis, 54; pardina, 410
Amateurs and gentlemen's gardeners at exhibitions, 127
Anemones, taking up, 332
Angelica culture, 168
Angræcum citratum, 163
Annuals—for bedding, 152; for ornament and bouquets, 102; ornamental-foliaged, 134; for pots, 163; for late blooming, 218; culture of early, 451
Anthurium Scherzerianum culture, 168
Ants—driving away, 199, 315; exterminating, 333, 432; expelling, 397
Aphides, destroying in the open air, 333
Apples—for North of Ireland, 109; branches sawn off, 111; pruning pyramidal trees, 251; crop of 1867, 372
Apricot—v. Peach treatment, 74; profusely set, 276
April, hardy plants flowering, 407
Aquilegia pyrenaica, 28
Arabis—variegata, propagating, 398; lucida variegata for edging, 432
Artemisia annua, 348
Arts and Sciences, Hall of, 312
Ash, grafting a Weeping, 199
Asparagus—beds, saving, 218; making, 252, 301; planting, 252; culture, 282, 314; blight, 347; couch grass in beds, 348; a bundle of, 380; fasciated, 380
Aspect of greenhouse, 238
Asphalt walks, 266
Asphalting v. gravelling, 104
Asphodelus culture, 74
Aster, Cape, culture, 364
Aucuba—berries poisonous? 45; Standish's hermaphrodite, 71; pollen of, 233; flowers, fertilising, 301; cuttings, 316; raising from seed, 381
Auricula seedlings, pricking out, 332
Aviary—removing paint from, 116; birds for, 140; birds in, 272
Ayr Poultry Show, 235
Azaleas—forcing, and culture, 13; Her Majesty, 23; soil for, 54; management, 74; leaves falling, 109; list of, 119; potting, 167; not flowering, 218, 253; propagating, 267; cuttings, 452

Bacon, Wiltshire mode of curing, 20
Badminton Poultry Show, 434
Balm, propagating Golden, 453
Balsams for July, 94
Bantams—with Cochin-Chinas, 20; dubbing Game, 80, 420; Sebright, 234; pencilled, 318; story of the Black, 361; chickens, food for, 438
Bark-bed, fungus in, 413
Barkston Head, 9
Barleria Gibsoni, 163
Basket plants, hardy, 300
Bath and West of England Poultry Show, 417; doings at, 434
Beans, protecting, 125
Bedding plants—new variegated, 153; from seed, 169; exhibiting collections of, 249; for a north aspect, 252; blue flowered, 322; blue, 376
Bedding-out, rules for, 397
Bees—hive overturned, 19; swarms deserting, royal cell sealed, 20; Egyptian, foul brood, 39; Woodbury hives, 40; brood remaining undeveloped, supply of water important, limiting drones, shifting hives, 60; American Bee-keepers' Institute, shifting stock hives, 79; maggots in combs, breeding in supers, storing combs, 80; swarms clustering, variation in hybrids, hiving in moveable comb hive, breeding in supers, starvation amid plenty, Ligurian queens, 98; Woodbury hives, 115; clustering, moving hives, total mortality, 116; an unlucky apiary, pollen-gathering at Christmas, 139; food of queens, importance in the economy of nature, foul brood in a purchased stock, boxes for hives, woodentopped straw hives, 140; foul brood, 155; boxes for hives, feeding in spring, 156; transformation of comb, removing old comb, 171; Pettitt's new hive, gloves, 172; hybridisation, plurality of queens, 187; tomtits, "Management of," decayed stock, greatest apiary, 198; fumigating, keeping in Devon, 202; driven, foul brood, aspect of apiary, 203; desertion of hives, condemned and saved, hives, artificial swarms, 204; breeding in supers, young, successful driving, gloves, employing empty combs, Woodbury's unicomb hive, 220; foul brood, queenless, unfertile queens, 239; distance of drones' influence, breeding in supers, 249; advantages of frame hives, hybridisation, 255; hives, situation of, entrance to Nutt's collateral, 256; Bagster's melting honeycombs, 270; propagating Ligurians, 271; preventing swarming, flowers for, artificial swarms, production of queens, ventilating, 272; plurality of queens in a hive, 287; how to empty honeycombs, non-resisting, propagating Ligurian, Payne's hives, 288; in Russia, 302, 401; frame hives, feeding, range of flight, 304; Ligurians in Ireland, drone-brood, 319; honey candying in combs, 320; mistaking their hives, 335; mead or metheglin, preventing loss of swarms; Ligurians in Ireland, obtaining artificial swarms, 336; hybridisation, 351; obtaining artificial swarms, preventing second swarms, 352; non-resisting, 367; "Why did ye die?" comb-emptying machine, not working in a super, destroying drones and drone-brood, 368; Ligurian disappointments, mead, metheglin, and hydromel, 383; dressing hives and feeding swarms, 384; a city of, queen laying eggs in one cell, artificial swarms, 402; Ligurian disappointments, 418; in Egypt, 419, 436; artificial swarms, 420; bar-frame hives, 435; at the Manchester Exhibition, 438; promoting swarming, confining, 455; trapping drones, united swarms, swarms, foul brood, destruction of drones, honey harvest, 456
Begonia Pearcei culture, 81
Berkeley, Rev. M. J., 344
Berks and Hants Poultry Show, 309
Bignonia—argyreo-violascens, 81; radicans, propagating, 266
Billbergia sphaeelata, 410
Bindweed, destroying, 373
Bird dealers, 90
Birmingham Rose Show, 351; Albion Pigeon and Rabbit Show, 418; Poultry Show, this year's, 423
Bletia Sherrattiana, 410
Bog soil, trees for, 110
Boilers—tubular, 13; piping one will heat, 54; improved saddle-back, 89; for heating three houses, 93; management of, 133; heated by kitchen fire, 151; heated by gas, 199; and their bursting, 232
Bones, dissolving, 109
Border, plants for shaded, 109
Botanic (Royal) Society's Shows, 236, 277, 368, 375, 392, 425; florists' flowers at, 443
Bottom heat, 168
Bougainvillæa glabra, 300
Bowiea volubilis, 28
Bowling-green making, 217
Box—cutting, 217; edgings, trimming, 281; cutting, 307
Brahma Pootras, 156, 349, 382, 434; characteristics, 40; at the Bristol Show, 76, 96, 112, 136; and Grey Dorkings, 140; breeding Dark, 170, 186, 200, 267, 302, 317; food they consume, 187; vulture-hocked, 189, 284; usurpation, 199, 219; combs and hocks, 213, 219; not hatching, 220; crosses in dark, 236, 238; coughing, feathers, 240; colour of dark, 253; size and symmetry of, v. Hamburghs, 254; comb of, 269; pea comb, 285; chickens losing feathers, 320
Breasts, crooked, 20
Brent, Mr. B. P., 71
Brighton Poultry Show, 454
Bristol and Clifton Poultry Show, 35 56, 78
Broccoli for spring, 268
Bulbs after flowering, 414
Bullock's liver for fowls, 240

Cabbage—culture, 149; new, 150; manuring, 163; sowing, 192; early, 283; Veitch's Improved Matchless, 431
Caladiums—rootstocks decaying, 134; culture, 150, 152; growing specimen, 184; liquid manure for, 453
Calceolaria cuttings, 185
Californian items, 69
Camassia esculenta culture, 994
Camberwell, beware of, 366
Camellias—stocks for, leaves yellow, 32; buds falling, grafting, 54; soil for, 54, 67, 381; propagating, management, 74; stocks for, 93; culture, 118, 225, 244, 276, 293, 361; list of, 119; grafting, 151; green turf for, 184, 210; Mrs. Dombrain, 211; in conservatory-bed, 216; not flowering, tubs for, 218; for market, pruning roots, 234; select, 252; removing, 268; soil and treatment, 292; unhealthy, 316, 414; leaves rusted, 348
Campylobotrys refulgens culture, 292
Canada—friends in, 162; notes in, 229; jottings from, 293; West, 414
Canaries—pairing, 140, 368; with inflamed skin, 156; among Rhododendrons, 220; for an aviary, 256; asthma in, 272; eating eggs, 288; footless, 352; eggs shell-less, 384; prizes for, 401; feathers diseased, 438
Cannas, planting, 348
Carnations—select, 94; and Pinks, supports for, 431
Carrots for fodder, 93
Casimiroa edulis, 84
Cassia corymbosa culture, 316
Catalogues, 4
Catarrh in fowls, 116
Cat, chicken-eating, 402
Cattleya Dowiana, 3 Warscewiczii 263; citrina, 300, 410
Cauliflower culture, 284
Cedrus deodara pruning, 86
Celery—winter protection for, 27; culture, 281, 345
Cerastium tomentosum, propagating, 398
Cereus hexagonus grafting, &c., 266
Chamærops seed sowing, 74
Cheere, Rev. G., 312
Cheltenham Horticultural Show, 425
Chickens—food for, 286, 309; dead in their shells, 368; blistered, 368; killed by kindness, 402; dying, 439; drooping, 456
Chimonanthus grandiflorus from cuttings, 148, 175
Chiswick, vacancies at, 164
Christmas trees, 12
Chrysanthemums—new and old, 100; (Pompone) St. Michael, The Countess, and Madge Wildfire, 211; culture, 279
Cinerarias — culture, 221; sudden death of, 248; flagging, 252, 300; dying suddenly, 279
Citrus—japonica, 147; genus, soil for, 364
Clavija fulgens, 163
Clematis round trees, 216
Clerodendron Balfourii culture, 217
Climbers for walls of dwellings, 133
Climbing plants for greenhouse, 199
Coal—quantity needed, 234; economy in, 319
Cochin-Chinas—cock's comb, 40; White and Buff mixed, 80; cock's eyes, 116; cock, tail of, 135; paralysed, 140; not laying, 172, 384; bow staggering, yard floor for White, 204; legs warted, 256
Cockerell, Capt., resignation of, 130
Cockroaches, 420
Cockscombs for July, 94
Cocoa-nut fibre refuse for the Gladiolus, 252
Cold—intense, 28, 45, 65; minimum, 51; and its consequences, 65, 105, 129, 147, 161, 163, 177, 195
Coleus Verschaffelti for bedding, 364
Columbarian Society, the City, 287
Combs—frost-bitten, 116; varieties of, 116; of cock bleeding, 304
Competitors, let them be fairly matched, 126
Coniferæ at Basing Park, 294
Conifers, fine, 66
Conservatory—heating and planting, 169; glass for south, 184; plants for, 252
Convolvulus mauritanicus for an edging, 110; culture, 169
Cordyline australis, 268
Coronilla dome flowering, 398
Correa potting, 300
Cotton—seed, 13; improvement of promoted by a knowledge of the plant, 127
Covent Garden Market, 13, 32, 53, 73, 92, 108, 129, 151, 167, 183, 198, 216, 233, 251, 266, 282, 299, 315, 332, 347, 363, 380, 397, 413, 432, 452
Cows dropping after calving, 135
Crump in cock's foot, 438
Crataegus oxyacantha, new double, 410
Cream, production of, 172
Crewe Cœurs, 384; head affected, 40; feathers ragged, 403
Crinoline and its consequences, 321
Crocuses—failure of yellow, 252; bulbs, moving, 283; eleven varieties, 410
Croquet-ground, returfing, 316
Cross-breeding fowls, 116
Cross breed of fowls, 186
Crotons, soil for, 381
Crystal Palace, 47; Bird Show, 137; Show, 363, 374
Cucumbers—not setting, 13; failures, 86, 104, 223; planting out, 150; on trellis, stopping, cocoa-nut refuse for, 184; avoiding failures, 193; for cool culture, 234; in pots, 282; continuous supply of, 290; with Mushrooms, 301; bitterness in, 311; growing on ridges, 313; not swelling their fruit, 347; culture, 349; pot-culture, 375, 391; failed, insects in frame, 398; on ridges, disease, 412; training, 452

OCT 15 1910

Cupressus Lawsoniana from cuttings, 161
Currant—buds of Black swollen, 13; culture, 26, 193; Black, bud insect, 74, 380; pruning and propagating Black, 86; tree culture, 193; insect preying on the Black, 288; fruitless, 397; summer-pruning, 453
Curcuma australasica, 28
Cuthush's spring flower show, 227
Cuttings, hotbed for, 94
Cyclamens—frosted, 134; culture, 225, 260; persicum culture, 324; not flowering, 348
Cygnets, feeding, 402

Dahlias for exhibition, 169
Daisies, eradicating, 168
Daisy, Anemone-leaved for edging, 432
Dalechampia Roezliana, 360
Dandelion for fowls, 88
Daphne odora buds falling, 73; indica potting, 300; cneorum, propagating, 398
Daturas, planting, 348
Delphiniums—select, 111; formosum, 364
Deubies, 143
Dendrobium macrophyllum Veitchianum, 416
Deodorising, 397; night soil, 199
Depredators, deterring, 345
Dew-point, 312
Dianthuses, removing, 453
Diarrhœa in chickens, 420, 456
Dick, Mr. Robert, 130
Dictyopsis Thunbergii, 263
Diplademia starting, 54
Disa grandiflora, 195; culture, 348
Dobson, Mr. J., 344
Dombeya Mastersii, 263
Dorkings, 80; Grey and Brahma Pootras, 140; hens spurred, 188; hens picking feathers, 204; points in White, 240; hen's combs, 384, 399; 399; cock paralysed, 402; chickens crooked-breasted, 455
Draining a clayey soil, 413
Drip from room of stove, 151
Drunkeuness, 390
Dubbing-scissors, 116, 402
Ducklings and artificial mother, 384; dying in the shell, 420
Ducks — Rouen, for exhibition, 40; lame, 156; number for a drake, 172; snails for, 352; eggs soft, 256; rearing Call, 304
Dumfries Ornithological Show, 38
Dyckia rariflora hardy, 165

Engings for walks, 61, 100, 143, 222
Edinburgh Working Men's Flower Show, 441
Egg-producing fowls, 116
Eggs—production of, 20; at Birmingham Show, 20; sprinkling while hatching, 40; detecting fertile, number a hen lays, packing for travelling, 80; ill-flavoured, 156; from pullet, 156; removing as soon as laid, 188; imported, fowls for producing, 204; good producers of, 240; packing, 256; chilled, 304; preserving, 304; in fine sawdust, 320; purchased, unproductive, 350; weight of, 352; poultry yard for wholesale production of, 382; guaranteeing high-priced, 415; not hatching, 420; vitality retained in chilled, 435; unproductiveness of high-priced, 454
Elæocarpus reticulatus culture, 218
Embothrium coccineum culture, 452
Entomological Society's Meetings, 8, 87, 163, 180, 262, 326, 393
Epidendrum churneum, 9, 360
Epimediums, 283
Epworth Poultry Show, 334
Eranthemum rubroveninm culture, 284
Eriostemon Smithii culture, 218
Essences, fruit, 283
Eucharis amazonica culture, 364
Evergreens—for a blind, 32; not generally known, 158; pruning, 217
Everlasting flowers, 13
Example, a worthy, 311
Exhibited fowls injured, 34
Exhibitions, horticultural, in June, 395

Farfugium grande, hardiness of, 142
Feather-eating fowls, 420, 438
February, hardy flowers in, 177
Fernery—constructing, 94; charcoal fire in, 217; slugs and woodlice in, temperature, 284
Ferns—for a fernery, 184; losing their fronds, 218; temperature for, 252; culture of Filmy, 305; Golden not thriving, 316; acclimatisation of New Zealand tree, 391; blackened, and woodlice on, 398
Ferrets, 384
Figs—the Channel Islands, 44; trees, cutting back, 168; out of doors, 379
Fir and Pine, 73
Fittonia argyroneura, 360
Fleas in poultry-house, 204
Florists' flowers at the Royal Horticultural Society's Show, 222
Flower gardening, jottings about, 442
Flowers—and their associations, 175; beds, size and separation of geometrical, 210; planting, 252, 253; destroyed, 267; and their fitness, 294; pots, cleaning, 348; preserving colour of dried, 398
Flues, lime cement for, 253
Foliaged plants, ornamental, 421
Forcing-house temperatures, 110
Forcing flowers, art of, 246
Foreman's management of fires, 144
Fowls—exhibiting borrowed, 34; mutilating a competitor's, 55; for a cottager, 55; throats disordered, 80; lungs, abscess in, 93; dung as a manure, 111; food required for, 116; breathing with difficulty, 116; catarrh in, 204; dung for liquid manure, 217; disordered, useful, 220; trespassing, 234; cottagers', in Sussex, salt for, 254; eating feathers, 272; desirable kind, 272; failures with, 304
Frame, uses of, 74
Frames, &c., 215
French varieties of fowls, 220
French Lavender, 253
Frosts—excluding, 52; of May, 376, 378, 423; of January and May, 386
"Fruit Garden, The Miniature," 104
Fruit, essences of, 283; artificially flavoured, 429
Fruit-trees, shoots, pinching, 84; transplanting large, 117, 162; pinching shoots of dwarf, 251; house for growing, 317; prospects, 372, 376
Fuchsias — potting, 167; for exhibition, 169; list of hardy, 453
Fuel, economising, 167
Fumigating, plants injured by, 74
Fungi, parasitical, 71
Furnaces, management of, 133
Furze, cutting down, 284

Game fowls, 20, 418; cocks fighting, 20; points in, 83; breeding Duckwing and dark blood Pile, size of cocks, 60; breeding, 75, 153, 170, 185, 201, 237, 285; with different legs, food for, 80; characteristics, 95, 131; colour of yellow Birchen hen, 172; what trees and shrubs are not injured by, 148, 175, 210; not laying, 240; origin of, 334; hen's comb, 368; cock's beak damaged, 384; cockerels, 256; crossing for colour, 268; varieties of colour, 302; breeding this year, 458
Gapes, 304; in chickens, 415, 420; administering camphor for, 438
Gardenia fragrans not flowering, 217
Garden—of one acre, labour needed, 33; of two acres, men needed for, 94; expense of, 169; with north aspect, 218; management, 347
Gardeners—examination for honours, 43, 66, 343; Improvement Societies, 43; Benevolent Institution, 301, 377
Garston vineyard, 62, 261, 338
Gauze for fruit protecting, 265
Geese with projecting feathers, 80
Genista — not flowering, 234; done flowering, 338
Gentiana acaulis sowing, 199
Gesneras—zebrina splendens, leaves curling, 34; culture, 110; not thriving, 333; Chromatella, Cymosa, Lindleyana, Rosea punctatissima, 360
Gishurst Compound, 444
Gladioluses—in poor soil, 25; Impératrice Engénie, Reine Victoria, and John Waterer, 103; cocoa-nut fibre refuse for, 252; at Fontainebleau, 422
Glass—ground, to increase light, 11; substitute for, 315
Glazing a small span-roofed house, 332
Gloxinias — culture, 110, 421; list of, 348
Glue as manure, 252
Goldfinch mule with indurated skin, 40
Gold fish—curing fungi on, 140; in an aquarium, 172; disappearing, 288; with trout, 336
Gomphia Theophrasta, 360
Gooseberries—two select, 432; summer-pruning, 453
Grafting-wax, 109
Graft's influence on the stock, 426
Grapes—Mrs. Pince's Black Muscat, 11, 74; in a cool house for market, 26; cracking, 103; bunches becoming tendrils, 109; Royal Ascot, 164; Muscats shanking, 168; Muscat spotting and shanking, 184; rusted, 184, 301; time required for ripening, 195, 276; shanking, 216; stalks shanking, 332; Archerfield Early Muscat, 348; dark coloured, 364; spotted, 380; preventing shanking, 398; failures, 451
Grave, flowers for, 414
Gravel of drive, turning, 267
Greenhouse—constructing, 32; heating a small, 185; not completed, 217; heating, fruits in, 235; climber for back wall, 300; heating and constructing small, 348; plants for flowering in July, 348; constructing a small, 433; stages, 452
Grias cauliflora, 28
Griffinia hyacinthina maxima, 360
Guano liquid manure, 284
Guinea fowls, to distinguish sex, 304
Guzmannia picta culture, 283
Gypsum as a fertiliser, 448

Halifax Poultry Show, 113
Hall of Arts and Sciences, laying foundation by the Queen, 344
Hamburghs — comb, 20; Silver-spangled cock's tail, 77; tail of Golden-pencilled cock, 140; cockerels dying, 156; distinguishing age of, 172; v. Brahma Pootras, 254; varieties, 256; merits of, 454
Hardiness of shrubs, 284
Harness-room stove, 80
Hatching, artificial, 367
Hays's Constant Stove, 184, 253
Haythorn, Mr. John, death of, 195
Heat—danger from accumulated, 81; accumulated 108, 228; radiating from pipes, to prevent, 152
Heaths, cutting down, 333
Heating—modes of, 41; failure in, 53; small plant-houses, 134, 433; by hot water, regulating, 167; pipes partially hot, 168
Heckmondwike Poultry Show, 18
Hedge, evergreen, 74
Helianthemum ocymoides, 28
Heliotrope unhealthy, 234
Hens—abdomen swollen, 80; proportion of cocks to, 140; feathered, 188; eating eggs, 272, 304, 368; inducing broodiness, 368; not laying, 384; with inflamed vent, 420
Herbary management, 298
Hoe, a scuffle, 360
Hoeing, its influence, 354
Hollies—grafting and budding, 33, 109; transplanting, sowing, 283; watering newly-planted, 316
Hooper's Nursery, 433
Hop—drying, 41; for Strawberry-beds, 315
Hornbeam, propagating, 74
Horticultural Exhibitions, conflicting, 82
Horticultural (Royal) Society, Annual General Meeting, and Report of Council, and Chiswick Board, 90, 103, 120; becoming a Fellow, 332; Botanical Lectures, 191, 245, 262, 278, 294, 309; Bury Show Special Prizes, 47, 90, 195; Committees and General Meetings, 66, 115, 177, 209, 245, 279, 325, 357, 378, 390, 424; Capt. Cockerell's resignation, 130; and Commissioners of International Horticultural Exhibition, 145; First Spring Show, 208, 232; Mr. W. Paul's Show of Spring Flowers and Lectures, 224, 246; Second Spring Show, 278; Special Prize Show, 325; Floral Fête, 344, 357; Tricolor Pelargonium Show, 357, 373; June Show, 377, 389, errors in prize list of, 410, attendance at, 411; Weekly Shows, 4, 325, 344, 357, 373, 391, 424, 443; gardeners' examinations, 313, prizes awarded, 411; Journal, 59; Vice-Presidents, 181
Horticultural Shows in July, 450
Hospital for heart diseases, 413
Hotbeds—heating, 54; making, 138; for cuttings and seeds, 265; for raising seedlings, 249; making a slight, 299; temporary, 332
Hot water—heating by, 54; pipes for bottom heat, covering, 864
Hondan fowls, 301, 384; confined, 80; characteristics, 204
House-of-all-work, heating, &c., 259
Humeas—dying, 316; elegans culture, 403
Hyacinths — The Roman, 67; in a room, 13; Early Roman, 84; done blooming, 151, 167; effect of their perfume; in Inner Temple Gardens, 249
Hydrangea paniculata, var. grandiflora, 360
Hygrometers, 7

Ice—keeping, 7, 106; preserving, 30; cellars, 47; stack, 53; collecting and storing, 64; amusements on, 91
"Iconum Botanicarum Index," 51
Impatiens latifolia, 163
Incubators, 16, 187; management, 38, 415; ventilating, 98; and temperatures, 138; a new, 171, 219; hatching by, 238, 269, 456; rival, 367; regulator, 422, 438
Indian Corn growing, 199
Insects, banishing, 218
"Instantaneous Reference for Poultry, Pigeons, and Rabbits," 139
International Horticultural Exhibition of 1866, 391
Ireland (South), Poultry Show, 115, 136
Iresine Herbstii, 258; in North America, 159; aureo-reticulata, 252; propagating, 317
Iris—Kæmpferi, 216, 234; a small, 381
Iron, oxide of, in water, 380
Ismene amancæs culture, 364
Isolated plants in flower gardens, 368
Ivy—for fernery, 151; pruning, 168; variegated, 421
Ixias under hand-lights, 51
Ixora coccinea leaves browned, 234

January, hardy flowers in, 85, 177
Jasmines shedding their flowers, 349
Jedburgh Poultry Show, 112
Juniperus recurva, 142

Kendal Poultry Show, 77
Kidd, W., 51
Kirkcaldy Poultry Show, 57
Kitchen—range, hot air from, 8; fire, hot air from, 74; boiler, heating from, 217
Kumquat, 147

Labels for fruit trees, 4
Ladder, the American, 243
Lælia—albida var. rosea, 263; majalis, 425
La Flèche fowls, 334
Langholm Poultry Show, 37
Lapageria rosea—seeds sowing, 152; propagation, 300
Lapwings, 239, 240
Latania seed sowing, 74
Launceston Poultry Show, 400
Laurels—leaves for fumigating, 31; on a bank, 283
Lawn — worms in, 252; renovating, 283; covered with lichen, 284; improving, 316; destroying fungus on, 432
Laying, promoting, 80
Leaf mould making, 414
Leaves—bleached, management, 83; skeletonising, 51; collecting, 132
Le Bresse fowls, 456
Leeds Poultry Show, 34
Leg weakness—in fowls, 20; in chickens, 384
Leigh Park, 404
Liability for loss, 240
Lilac-tide, 372
Lilacs—forcing, 151; leggy, 168
Lilium—lancifolium culture, 109; auratum, and tenuifolium sowing, 134; hæmatochroum, 163; auratum culture, 185, 257; management of offsets, 252; seedlings, 348; bulbs, 316
Lily of the Valley, forcing, 234; after flowering, 316; bulbs from Japan, 348
Lime—with animal manure, 32; and salt, applying, 167; for fowls, 220; cement, 253; rubbish, grass on, 297; water, making, 346
Lindley Library, 391
Linum flavum, 234
Liquid manure in a stove, 151
Lobelias, tall, 348
Long Firm again, 171
Long Sutton Poultry Show, 415
Loquat, 199
Luton Horticultural Show, 126
Lycaste Skinneri culture, 94

Madagascar, legumes from, 291
Magnolia Leonei, 410
Maiden-hair fronds decaying, 168
Maize, Japanese, 364
Malt combs for Strawberry-beds, 315
Manchester Poultry Show, 16; National Horticultural Exhibition, 375, 406
Mangold Wurtzel for poultry, 153
Man traps illegal, 103
Manettia micans, 81
Maranta illustris, 410; roseo-picta, 361
Masters, Dr., lectures by, 181, 245, 262, 278, 294, 309
Mathiola bicornis, 28
May, flowers blooming in, 324
Mead or metheglin, 336; v. honey beer, 437
Mealy bug, 317
Melons—for July, 94; pit constructing, 169; for exhibition, 193; to ripen in August, 234; plants killed, 251; pit heating, 364; in a cold frame, 413; dying off, diseased, 414
Melrose Poultry Show, 238
Men for an acre, 13
Mesospinidium sanguineum, 168
Meteorology of 1865 at Linton, 160
"Meteorology, Handy Book of," 311
Mignonette, tree, after flowering, 364
Millet as poultry food, 384
Mimulus cupreus, sowing in heat, 134; maculosus culture, 381

Mistletoe, 267; soed, sowing, 33, 151, 168
Moles, 316
Moss on lawn, 234
Mulberry tree—wiser than the Peach, 109; unfruitful, 199; propagation, 266; bearing early, 283
Munster Poultry Show, 18
Mushrooms—culture, 12, 283; forcing, 182; encouraging in a field, 184; beds, woodlice in, 125; spawn, inserting in fields, 316
Myosotis alpestris, 168
Myrtus Cheken, 360

Nantwich Poultry Show, 135, 154
Nectarine trees—treatment of, 277; unfruitful, 347; blossoms falling, 381
Netting—for seed-beds, 32; for Peach trees, 151; for protection, tanning, 184; a yard of, 234; for doors, &c., 234; cost of, 284; for a fruit garden, 316
Newcastle-on-Tyne Columbarian Society, 57; Bird Show, 114
Newcburch Poultry Show, 335
New Zealand, insectivorous birds for, 167
Nitrate of soda for a lawn, 32, 54; as a manure, 328
Northern Poultry Club Show, 153

Oak—Evergreen, injured by frost, 300; and Ash, leafing of, 388, 442
Oats, ground, 220
Odontoglossum grande culture, 300
Okeford Fitzpaine, 28; Roses and fruits at, 356
Oleanders not flowering, 267
Oncidium serratum, 211
Onions, sowing, 182; culture, 264
Orange-house in January, 119
Orcharde, old, in Kent, 69
Orchard-houses, as a protective, 210; future, 241; management, 197, 265, 310, 314, 393; Peaches in, 310; blossoms in, falling, 333; the fore and against, 342; pros and cons, 405
Orchids, Mr. Bateman's notes on, 247
Osier planting, 32
Osmunda regalis culture, 316

Paisley Ornithological Show, 34
Pampas Grass, culture, 1; frosted, 152; drying, 364; injured by frost, 414
Pancratium culture, 364
Passiflora laurifolia self-fertilising, 64
Pansies—Thomas Downie, Miss J. Kay, Imperial Blue, and Hugh Adair, 28; sowing in heat, 134; dying suddenly, 279
Paris Universal Exhibition, 327, 337, 388; horticultural jurors, 249; horticulcultural awards, 309; Garden, 370
Parrot eating feathers, 288
Parsley culture, 298
Parsnip seed eaten, 349
Passifloras—laurifolia self-fertilising, 64; for a greenhouse, 348
Passion-Flower for open air, 216
Paulownia imperialis, sowing seed, 292
Paul's (W.), show of spring flowers, and lecture on, 224, 248
Peach trees—covering, 13; wood of red spider on, 32; newly planted, 54; scale on, 54; not hurt by the frost, 94; failing in peachery, 106; summer-pruning, training in a house, 109; wash for, 110; buds, 192; treatment of, 277; glands in leaves, 284; fruit falling, 317; nearly killed, 364; leaves blistered, 364; blossoms falling, 381; and Nectarines in orchard-house, thinning fruit, 414; leaves diseased, 432
Peacock's feathers skinned over, 320
Pears—planting, 4; protecting blossom, 13; culture, 27, 50, 70, 446; planting, 47; and perplexity, 85; Huyshe's Victoria, Prince of Wales, Princess of Wales, and Prince Consort, 88, 361; on Quince and Pear stocks, 173, 190; Beurré Clairgeau, 211; eighteen guineas per dozen, 235; pruning pyramidal, 251; culture, fan training, 295; blossomless, 316; leaves diseased, 333; unproductive in pots, pyramids unproductive, 380; summer pruning, 447
Peas—early, 4, 67, 108, 153, 192, 198, 197, 225, 249, 260, 335, 449; seed needed, estimate of varieties, 28; sowing and protecting, 149; protectors for, 199; Marrow for autumn, 199; tenderness of forced, 215; Gardener's Delight, 223; protecting, 226; planting out, 350; culture of, 258, 342; roots eaten by millipede, 332; early, tested at Chiswick, 395; the new, 443; failing, 452
Peat charcoal, 184; making, 216
Pelargoniums—Meteor, 28; grafting, 32; cuttings, watering, 74; Tirebuck's, 126; cutting down Zonal, 134; Castlemilk, 151; for exhibition, 169; treatment of old bedding and Mrs. Pollock, 184; sports, cuttings, 185; of the past season, 191; Miss Martin, 211; for bedding, 216; sifting soil for, 218; pinching, 234; old plants of Tom Thumb, 234; Tricolored, 243, 357, 373; Milton and Negress, 263; culture of Tricolored, 273; origin of, 275, 291; estimate of bedding, 289; at Royal Horticultural Society, 297; bedding, 301; culture and turf soil for Tricolored, 308; "Treatise on hybridisation and cultivatioo," 312, 326; leaves blackened, 318; origin of Tricolored, 323; exhibition at South Kensington, 330; leaves spotted, 349; sporting, Mrs. Grieve, 380; origin of variegated, 387; definition of Zonal and Nosegay, for exhibition, 414; what are variegated? 441; at Bury St. Edmunds Show, 445
Pentstemon seed sowing, 348
Peperomia arifolia v. argyreia, 211
Perches for fowls, 172
Perennials, merits and culture of hardy, 353
Perth Poultry Show, 97
Pests of the garden, 451
Pets, ladies', 40
Pheasants—confined, 80; in an aviary, 220; sitting and feeding, 402
Philadelphus mexicanus not flowering, 217
Phlesia buxifolia culture, 452
Phiioperisteron Society's Show, 78
Phloxes, list of, 364
Photinia serrulata propagating, 283
Picotees, select, 94
Pigeons, 334; Barbs at York, 20; flight feathers of Owl, 80; dung as manure, 151; preparing Runts for exhibition, Pouter cock ill, 116; entranco for Fantails, 156; Turbits, 204; notes on fancy, 235; Society, 287; for a lady, pole-houses for, 256; Runts, 304; laying soft eggs, 402
"Pigeons, their structore, &c.," 270
"Pigeons, Breeding of Trumpeter," 154
Pimeleas—after flowering, 318; decussata culture, 54
Pin in a fowl's breast, 219
Pine Apples—black inside, 93; select, 109; in small pots, 173
Pine-pit heating, 185
Pink, parentage of Clarke's Lord Lyon, 445
Pipes, circulation of water in quadrangular, 301; hot-water, quantity needed, 198
Pits, shaded, 109; converting to a house, 33
Plantain, ersdicating, 168
Plant case, 218
Plants—drying, 32; recently introduced, 81
Pleroma sarmentosa, 211
Plough, snow, 216
Plum tree blighted, 349
Plunging material, 93
Poa trivialis argentea elegans, 348
Poinsettia culture, 266
Portulaca culture, 284
Potatoes, 6, 144; and their culture, 21; notes on some, 43; early, 67; Prince of Wales, 85; alkaline manures for, 93, 111, 393; sprouting for planting, 94; gossip about, 99, 127; best first early, 134; Birmingham Prize, 147; estimate of, 153; planting, 167, 183, 234; for the far north, 174; Grammars, 184; cause of disease, 194; York Regent, 223; growing on ridge-and-furrow system, 233; earthing up, 394; diseased, 412; experiments with various, 440
Pots, cleaning, 214
Poultry—past and future, 14; judging, 15, 94; show neglects, 16; keeping profitably, varieties together, wings cut, 20; proportioning sexes, 40; cottager's, in confined space, 55; in confined space, 60, 80; cross-breeding, 60; yard inclosure, height for, 80; handling at sales, 80; Committees, want of courtesy 95; protracted detention of, 95; mutilating at shows, 95, 135; exhibiting borrowed, 95; washing, 98; keeping, results, 111; effects of season on, 111; "Instantaneous Reference for Poultry, Pigeons, and Rabbits," 139; mortality among, food, market, 140; consumption of, 152; cross-breeding, 153; for damp yard, 156; sick, 156; fluoring for, 156; produce, 201; shows, summer, 201; doings, 253; keeping, year's result, 368; runs, 272; breeding hints, 351; houses, portable, 350, 382, 416; shows and their management, 350; keeping, extensive, 415; run, grass for, 420
Poultry Club, 15, 34, 302; late Treasorer of, 55; Secretary, 76
"Poultry-keeper, The Practical," 400
Primrose, blue, 258, 298
Primulas—seed, sowing, 13; seedlings, 94; cortusoides amœna, 81; diseased, 169; blue, 258, 298; Chinese, after flowering, 381, blooming a second year, 438
Privet berries poisonous, 268
Propagating—and Cucumber-house, 33; house, heating, 151
Propagation of shrubs and trees, 398
Protecting material, 72
Prunus sicensie, double, after flowering, 316; pruning, 349
Pruning-time, 337; evergreens, 398
Psidiums, 44; Raddii, 8
Pteris serrulata, sowing, 32
Pullets, what are, 438
Pyrethrums and Pæonies at Versailles Nursery, 426

Queensland, 152
Quickset hedge, caterpillars on, 54

Rabbits—lop-eared, ears of, exhibiting, 140; Welsh, 155; prizes for, 401, 415
Radiation of heat from the earth, 312
Radishes, 281
Rain—gauges for, 133; water becoming hard, 138
Railway charges, 16, extortion, 285
Ranunculuses, taking up, 333
Raphanus caudatos culture, 169
Raspberries, training, 132
Red spider—on Peach trees, 32; on wall trees, 89; a devourer of, 147
Rhododendrons—seed sowing, grafting, 110; protecting, 111; flowering early, 152; marginsto-punctatum, 163; seedlings, 168, 252; not flowering, 218; longifolium, 230; propagating, 283; pruning, 316; Exhibition, J. Waterer's, 407; injured by frost, 414
Rhubarb running to seed, 316
Ribbon border, 286
Rice for fowls, 118, 402
River bank planting, 151
Rivina lævis for table decoration, 275
Rock plants, list of, 364
Roofs, double, 73
"Rose Amateur's Guide," 135
Roses—importation of, who raised our best, 2; Napoleon III., 38; French with English names, abuse of terms, 46; pruning, 53, 216; exhibiting, 68; effects of the frost, 105; festoons of climbing, removing old Banksian, 110; notes of and about, 129; growing plants under standard, 133; forcing, 151, 234, 246; in pots in greenhouses, 157; for clayey soil, 169; sowing Alpine, 199; in a greenhouse, 184; Tea-scented in a greenhouse, 234; culture of pot, 253; training against a house, 266; and other florists' flowers at the Royal Horticultural Society's Show, 292; bark of trees eaten, 333; Tea-scented and Noisette in August, 332; prospects this year, 340, 341; insect on, 347; leaves blistered, 348; not flowering, 349; at Okeford Fitzpaine, 356; attar of, 361; insect destroying the leaves, 364; for list of stocks, 376; on Manetti stocks, 386; mildew on, 388; Isabella Gray not blooming, for training to house, 393; effect of frost on their pith, 405; injured by frost, 425; retarding their blooming, 432; at Brie-Comte-Robert, 450; removing in July, 452; taking up Tea-scented in winter, 452; cuttings, 453
Rubbish heaps, 101
Rubus leucodermis, 283

Saccharine food for fowls, 172
Saccolabium giganteum, 262
St. Cloud, trees before, 380
Salt for poultry, 98, 237, 254
Sand, granitic, for Ferns, 208
Sarcanthus crinaceus, 211
Sashes, double, 73
Savoy, Feather-stemmed, 338
Scale on Pine Apples, 283
Scilla sibirica, 410
Screen under trees, 318
Scutellaria costaricana, 419
Sea-kale—salting, running to seed, 168; forcing, 182; management after forcing, 252; culture, 299, 314; bitter, 364; leggy, 380
Sedum maximum versicolor, 360
Selaginella denticulata variegated, 252
Season, mildness of, 7
Seaweed as manure, 397
Seeds, protecting, 431; sowing small, 431
Seemann, Dr. return of, 429
Sewage—management, 53; town, 409
Shading, 346; material, 169
Shows of 1867, 8
Shreds, substitute for, 93, 109
Shrubs, hardy, forcing, 151
Simpson, Mr., testimonial to, 195
Siphocampylos Humboldtianus, 211
Sitting, preventing hens, 415
Skinner, Mr. G. U., 147; death of, 180
Sloping bed, planting, 333
Slugs—and snails, 313; destroying, 348; and seeds, 378
Snake millipede, 332
Snow on walks and houses, 30
Soap-suds as a manure, 109
Society of Arts' prizes awarded to gardeners, 411
Soda for manure, 300
Solanum capsicastrum culture, 398
Soot water, making, 346
Sophronitis grandiflora, 211
Sorghum tartaricum, 310, 327; *alias* cernuum, 297
Spanish fowls—worn out, 116; cock's comb black, 220; face treatment, 240; cock become thin, 256; cockerel disordered, 272; cock's face ulcared, 288; cock's face, 456
Sparaxis under hand-lights, 54
Sphærogyne latifolia culture, 168
Spinach, Australian, culture, 364
Spiræa salicifolia, 168
Spring-flowering plants, list, 266, 441
Spring flowers, 371
"Standard of Excellence," 415
Stanhopea oculata culture, 300
Stemonacanthus Pearcei, 410
Stephanotis floribunda in a greenhouse, 348; cutting down, 381
Stones, removing from soil, 252
Stoves in plant-houses, 231
Strawberries—for market, 4; planting, 54; what is a good crop of? 82, 160; injured by frost, 93; forcing, 101; planting out forced, 168, 333; Dr. Hogg, 276; going blind, 284; price of, 303; culture, 345; scapes eaten, 348; out of doors, 379; propagating by runners from unfruitful, 381; good crop of, 394; May Queen early, 335
Sugar-bakers' skimming, 54
Sugar Grass, Chinese, 218
Sulphate of lime as a manure, 233
Sulphur—in coals, 217; and lime, 234; burning in vinery, 333; quantity needed for fumigation, 348
Sunderland Bantam Show, 59
Super-phosphate of lime, 316
Sussex, cottagers' fowls in, 254
Sweet Williams removing, 453
Sycamore grafting, 218
Synadenium Grantii, 211

Tacsonia ignea not flowering, 53
Tallies, &c., making, 214
Tan—old, for Ferns, 218; insects in 234
Tapeinotes Carolinæ, 163
Telopea speciosissima, 448
Temperatures, natural, 355
Thorne Ornithological Show, 202; Poultry Show, 455
Thuja gigantea and Lobbiana confounded, 148
Tinnea æthiopica, 268
Tobacco-Pooley's ground, 377, 394; duty-free for gardening purposes, 407, 423, 442; touch paper, 445
Todea superba browned, 281
Tomato culture in cold frames, 444
Towerville, 25
Town—Gardening, 189, 207, 227; flower garden planting, 300
Trees, overhanging, 184
Tricyrtis hirta, 217
Triteleia uniflora, hardy, 180, 213, 249
Tritoma ovaria, sowing, 134
Tritonia planting, 110
Tropæolum tricolorum culture, 348
Tuberose culture, 110
Tulip Tree of New South Wales, 448
Tulips—under hand-lights, 54; early, 324; taking up, 332; single, ten varieties, 410; double, five varieties, 410
Turf—soil, 61; green, for soil, 95; storing for potting, 132; burned for compost, 152
Turfing, 265
Turkeys—fattening, 80; for breeding, 116; food for, 204; failures with, 304; young, picking their feet, 456
Turnips, 182; storing, 107; fly, preventing, 396
Tussilago farfara variegata, for bedding, 134
Tydæa and Achimenes, 58

Uschelina aurea, 81

Vacant ground, 13
Vallota purpurea culture, 169
Variegation of leaves, causes of, 385
Varieties—what is meant? 377
Vegetable Marrow culture, 199
Ventilating orchard-house, 432
Verbenas—cuttings, striking, 94; mildewed, 109; culture, 141, 176; cuttings, 185; planting out, 213; flowering in pots, 217; for exhibition, 31 Sweet-scented, cuttings, 331

Vermin, 183
Vines—our, 5, 23, 48, 68; and borders, 7, 44, 142, 206, 274, 327, 329; roots in wet soil, 13; borders, making, 22, 74; lifting, 82; borders, stratified, 45; compost, 59; admitting air to, 42; sulphur and clay for, 74; forcing, 74, 168; Black Alicante, grafting, 93; pruning, 94; borders, grubs in, 98; covering for, 98, 453; charcoal for, 151; planting, 110, 300; produce of, in a vinery, 111; culture, 117; stopping unfruitful, 134; brown patches on, 167; renovating old, 198; pruning old, 199; with terminal shoots killed, 216; breaking weakly, 217; removing shoots, 217; watering, 217; leaves browned, 218; at greenhouse back, 234; leaves scalded, diseased, 251; aërial roots of, 252; training, Muscat weak, 266; unproductive, 266; training, 290; ripening wood prematurely, 301; mildew, 260, 364; borders, inside, 310; leaves corrugated, 316; layering, 322; top-dressing borders, 333; fruitful at end of canes, 333;
Vines—*Continued.*
temperature for Muscat of Alexandria, 349; insect on, 397; unhealthy, air-roots on, watering in inside border, 398; fruitful becoming unfruitful, 408; thrips on leaves, 414; leaves scorched, 414; Muscat Hamburgh mildewed, 453; borders, wireworms in, 414; use of a glazed outside, 422; shoots mildewed, and bunches brown, 433
Vinery—dividing, 54; pipes for, 111; heating, 168; roof angle, 199; ventilating, 175; ground, 179, 211; making, 217; aspect, 300; fire inside, 316; cylindric or tower, 408
Viola cornuta, 371, 389, 444, 452; sowing in heat, 134; from seed, 234; planting, 316
Violets—Neapolitan, management of, 132; effects of their perfume, 249; Czar, culture, 300; in pots, 381
Vulture hocks, 136

Walks—concrete, 32; loose gravel, 185; managing, 363; subduing weeds on, 430
Wall trees—pruning old, 110; borders, 112
Walnuts, renovating old, 175
Walsall Poultry Show, 14, 96
Waratah, 418
Warszewicz, J. R. von R., death of, 181
Wart under hen's eye, 40
Water Lilies in a vase, culture, 83
Water containing iron, 216
Watering, 92, 452; seedlings, 299
Weeds on walks, to destroy, 228, 234; burning, 347
Week, work for, 11, 29, 51, 71, 90, 106, 131, 148, 165, 181, 196, 213, 230, 249, 263, 280, 297, 312, 330, 344, 361, 377, 395, 411, 429, 449; doings of last, 12, 30, 52, 72, 91, 107, 131, 149, 166, 182, 197, 214, 231, 250, 264, 281, 298, 313, 331, 345, 362, 378, 396, 412, 430, 450
Wellingtonia gigantea from cuttings, 168
Wentworth Poultry Show, 36
West, out in the, 22 9
Wharfedale Poultry Show, 287
Wheat, sprouted, for fowls, 204
Whitehaven Poultry Show, 58; the disqualification at, 76
Wigton Poultry Show, 269
Willows and Osiers, 73
Winter's effects at Messrs. Ivery's, 340
Wireworms, 347; destroying, 253; in Vine border, 433
Woodbridge Poultry Show, 350, 367
Woodlice—destroying, 251, 432; eating fruit, 414
Woodseat, 426
Worms, destroying, 410

Yews—managing Irish, 216; transplanting, 283
Yucca leaves drooping, 199

Zamia elliptica culture, 301
Zea japonica foliis albo-vittatis, 361
Zinc flower-pots, 233

WOODCUTS.

	PAGE
Barlaston Hall, flower garden	10
Bee-hives, Pettitt's moveable comb, and bar-frame	172
Flower-garden Plans	10, 428
Fruit-tree borders, formation of	50, 51
Hoe, Scuffle	360
Ice-house	106
Ladder, American	248
Paris Universal Exhibition, horticultural department	328
Pear, Huyshe's Prince Consort	89
„ „ Prince of Wales	88
„ „ Princess of Wales	89
„ „ Victoria	88
„ Fan training	296
Pear, Fan training, modification of	296
„ Horizontal training	70, 71
„ Oblique Cordon	447
„ Pyramid training	446, 447
„ Upright training	296
Poultry-houses, portable	350, 383, 416
Roses, exhibition stand for	129
Strawberry crinoline	210
Training, Double Lateral Cordon	212
„ Pear trees	70, 71, 296, 446, 447
Vinery, Ground	212
Wood seat, Flower Garden at	428

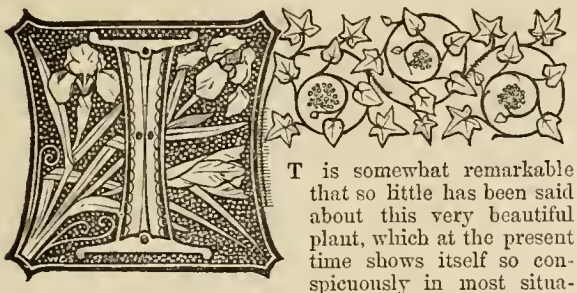
WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 1—7, 1867.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
1	Tu	Circumcision.	43.3	30.9	37.1	12	9 af 8	59 af 3	33 af 3	23 af 1	25	3 44	1
2	W	Myoporum parvifolium.	42.4	29.5	35.9	16	9 8	0 4	33 4	56 1	26	4 12	2
3	Th	Oxalis marginata.	43.0	30.6	36.8	19	8 8	1 4	30 5	33 2	27	4 40	3
4	F	Oxalis sanguinea.	42.6	31.3	36.9	16	8 8	2 4	24 9	17 3	28	5 8	4
5	S	Oxalis variabilis.	41.8	30.0	35.9	14	8 8	3 4	12 7	7 4	29	5 35	5
6	Sun	Epiphany. Twelfth Day.	41.0	28.8	34.9	13	8 8	5 4	55 7	3 5	●	6 2	6
7	M	Pittosporum tobira.	41.6	28.6	35.1	14	7 8	6 4	32 8	3 6	1	6 28	7

From observations taken near London during the last forty years, the average day temperature of the week is 42.2°; and its night temperature 29.9°. The greatest heat was 57°, on the 3rd, 1860; and the lowest cold 4°, on the 2nd, 1854. The greatest fall of rain was 0.86 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

LIBRARY
NEW YORK
BOTANICAL
GARDEN.

THE PAMPAS GRASS.



IT is somewhat remarkable that so little has been said about this very beautiful plant, which at the present time shows itself so conspicuously in most situations in the south of England. Is it thought not to be hardy enough to withstand severe winters, or has the novelty which it possessed when it was first introduced died away? Its beauty cannot be said to have done so, for nothing can be really more attractive than some of the specimens on which upwards of a hundred plumy spikes testify to the profuseness of its blooming, while its gracefulness as a plant entitles it to a place where its blooming is even more uncertain than in some favoured localities. Certain it is that the Pampas Grass is less grown than it ought to be. Many places of considerable size contain only a single specimen. As it is not over-nice in regard to situation it is deserving of being planted more largely than it has been. Except in one or two cases it has not as yet perfected seeds in this country, and therefore, as it does not naturally increase itself here by selfsown seeds, suckers, or layers, it must be propagated by other means. Fortunately these means are not difficult, and if there were a demand, young plants could be had in any quantity. I will now offer a few notes on the culture of this most beautiful of all autumn-flowering plants.

However objectionable some situations may be to the plant, certainly the character of the soil makes little difference to it. I have seen it thriving well on a dry rocky hill, and equally at home by the side of a pond or ditch; and the description of soil seems, indeed, to have less effect than the presence or absence of moisture, for I have seen it flowering in the greatest perfection on the black peaty soils of Bagshot, and here a plant is doing pretty well on the stiffest of clays. I think that it always requires sunshine to do well, and very probably it will succeed best where there is sufficient moisture without stagnation, for the best plant which I ever saw was growing by the side of a piece of ornamental water in the garden of J. Hollingworth, Esq., near Maidstone. This plant about three years ago had upwards of 120 spikes of bloom upon it, and I believe that number has since been much exceeded. The soil rested on Kentish rag, or what in other places would be called limestone, Other plants at the same place, growing in various positions, were also flowering well; but I believe that the whole had the advantage of sunshine at all times.

Free-blooming as the Pampas Grass is, there are times when its non-flowering is difficult to account for. Many years ago I planted one out in a dell amongst shrubs, the situation was moist rather than dry, and the plant grew and flowered for a few years, and I believe was amongst the first that did flower out of doors; each succeeding year added to the number of its spikes until in the bright warm summer of 1859 there was a blank—no flower, although the plant grew as fast as before, and seemed all right. Unwilling to remove a plant that was favourably situated, it remained throughout the next year, during which comparatively few plants of this species flowered, a circumstance which seemed attributable to the dull wet character of the summer. The severe winter which followed killed many plants of Pampas Grass in different parts of the country, and did not leave this one entirely unscathed; its non-flowering in 1861 was therefore excused. The plant recovering its former vigour, half a dozen blooms were produced in 1862, which, being less than it had furnished in 1858, was anything but cheering; and in 1863 and 1864 it was altogether destitute of flowers. This, of course, led to the plant being condemned, and having been taken up in the spring of 1865 it was divided into a number of small plants, some of which promise to do well, one or two being in flower at the present time. Now, how is the plant's not flowering in seasons, when other specimens did so to be accounted for? The situation, I have no doubt, exerted a considerable influence, for some trees and shrubs grew up and partially shaded the plant, and though it continued to grow no flower-stems were produced. In some situations a greater number of flower-spikes will be found on a plant of a given size than on another differently placed. We have here one or two specimens which seem as large as that referred to as having had upwards of 120 spikes of bloom upon it, yet we have never at this place reached half that number. The plants here are mostly growing on a dry stony soil. I believe the Pampas Grass suffers much from the roots of trees encroaching on it, and possibly this assisted the other cause in preventing the specimen in question flowering. It is certain that the Pampas Grass prefers being alone to contending with other plants for the occupation of an allotted space of ground; and it is equally true that it looks best when in such a position, for few plants can equal and still fewer excel it for symmetry of growth and a uniformly good appearance on all sides; it therefore deserves an open position, so as to exhibit its beauties to the greatest advantage.

Independently of its dislike to shade, or rather contention with other plants for support from the ground which it occupies, I believe that the Pampas Grass flowers more or less freely according to the varieties that are grown; for there are certainly different shades of colour, and possibly some varieties may be earlier than others. A somewhat dark-coloured one is often regarded as the earliest, though it is by no means the prettiest: the narrow-leaved plants also often furnish bloom earlier than the broad-leaved—that is, small plants begin to flower sooner; this is a consideration, for at best the Pampas Grass is not the quickest of plants to come into blooming, and some have to wait three or four years ere they have any bloom worth mentioning. Neither is it the best in the world to

propagate, for it sometimes happens that a stocky-looking plant that appears to invite being pulled into twenty pieces, with a little root attached to each, will be found not to yield more than three or four plants a few months afterwards. This, of course, is where they are left to take care of themselves; nursing in a proper propagating-house or ground will in many cases insure as many plants as offsets. The Pampas Grass is also not one of the easiest of plants to transplant; losses arise with it quite as often as with evergreen shrubs, yet the latter drawbacks are trifling, and ought not to prevent a more extensive cultivation of this charming autumn flower, which deserves a place wherever there is a chance of its flowering; and even in places where this is uncertain an isolated plant or two on sites judiciously chosen give a sort of tropical aspect to the spot not afforded by anything else. It would, however, be well if the farthest position northward at which the plant flowers were made known through the pages of this Journal, so that intending planters might know how to base their expectations. I believe the plant is much affected by the impurities of large cities, and is therefore not adapted for the London squares, but of this I am not sufficiently informed.

It has often been a matter of regret that this plant does not flower earlier, and a summer substitute for it has been suggested in the shape of Arundo conspicua, a pretty graceful-growing plant, but the paucity of the flowering spikes and their smallness, although borne on stalks as long as that of the Pampas Grass, renders it only a poor substitute; other kinds, however, may prove more suitable, and even earlier-flowering varieties of the Pampas Grass may in time be obtained. As it is, there seem to exist variations in the times of flowering as well as in the colour and formation of the spike. This is more interesting than if there were no variety, and affords another reason for a more extensive cultivation of the plant. —J. Robson.

NOTES OF AND ABOUT ROSES.

1. Importation from France.—I have read with satisfaction the protest, at page 404, against the wholesale importation of new Roses which are annually sent from France to tempt the unwary, and deceive even the most practised rosarians. Long before the publication of the article above alluded to, I have had it in mind to again direct attention to this subject, with the view of ascertaining whether it is possible to find some expedient for mitigating the plague yearly inflicted on the Rose-growing and Rose-loving public. At present there are but few signs of any abatement of the evil, for evil it assuredly is in many respects. It is a severe tax upon our patience; not much less so upon our purse, upon our credulity, upon our time; for it is a waste of time in propagating a large number of kinds "to prove" them to be worthless, and therefore a waste of material on account of a useless application of it. I am aware that these expressions will not be deemed "orthodox" by some of our more enthusiastic Rose friends, but it is necessary to speak out, and that, too, without reserve.

If a really good Rose makes its appearance, it matters not whence it comes, we welcome it, and accept it with due honour and delight; but so often do we have to glean it out amidst a host of worthless or indifferent companions, that the task becomes dispiriting, and we begin to regard with suspicion every new-comer. It is not simply good Roses that we should seek for out of the new announcements, but better ones—that is, such as show some marked improvement or new feature in advance of kinds we already possess, particularly as regards form, colour, and size, combined with healthy habit and constitution.

I believe that the majority of our nurserymen with whom the cultivation of Roses is one of the most important subjects of their business, regard, not simply with dislike, but with aversion, the thankless task of propagating so many new kinds annually, when experience has shown that only a few, a very few, will remain sufficiently long in favour to be both profitable and useful. Various remarks inserted in their catalogues seem to intimate this feeling rather strongly, still more so the number of names yearly expunged from their lists, previously inserted because they were new. That "Index Expurgatorius" of Roses, issued from Sawbridgeworth, though somewhat too rigorous to please most of us, is a notable advance in the right direction, and a severe but telling evidence on the part of the veteran horticulturist whose name it bears. The impatience of the numerous Rose amateurs to possess and try novelties is, doubtless, the great cause of the demand being supplied, and while the demand continues the supply will be sure to follow. I do not propose, however, to discuss this matter further than stating my belief that if purchasers would only wait a sufficient time, for the truth would be sure to come out, propagators would be relieved from a great burden, and the time, labour, and expense of increasing inferior Roses would be more economically applied, and more profitably too, by a more cautious and restricted selection from the host of new seedlings every year produced in France. I anticipate, therefore, no detriment to the interests of the growers who import them, but, on the contrary, much prevailing dissatisfaction would be removed; greater confidence and increased demand for what is really good would be substituted.

More convincing than any argument will be the statement of a few simple facts relating to the actual number of Roses raised in France during several consecutive years; a comparison of the total number with the actual number of the same period at present in the best trade catalogues will show very pointedly the extent to which this annual importation is attempted or actually carried on. By the Roses of any particular year is meant those sent out by our own nurserymen in the spring of that year, and, therefore, first known to us in the course of the season following, although announced by the French growers in the autumn previous. As we know at present but little of the past year's Roses, and almost nothing, except by name, of the batch recently published in these pages, no mention is made of any of them in the lists about to follow, nor are they included in any of the numbers about to be given. I therefore select the five years preceding last year—that is, from 1861 to 1865 inclusive.

The number of new Roses sent out during that period stands as follows:—

	1861	1862	1863	1864	1865
Hybrid Perpetuals	51	53	67	48	69
Bourbon	3	3	4	6	7
Teas	3	5	4	3	2
Other kinds	3	4	5	1	5
Total	40	65	80	58	83

In all 326.

If this number is not strictly accurate, the defect arises from the circumstance of M. Eugène Verdier publishing his announcements sometimes on a separate sheet. In one instance (1862), I have lost or mislaid this sheet; the total, therefore, is deficient by the number of Roses sent out by M. Eugène Verdier in that year—probably six or eight.

The number of new French Roses annually announced in the catalogues of our principal growers varies, of course, according to the number sent out in France. In the five years 1861-5 the numbers varied from about thirty-five to forty-eight; the actual number introduced during the whole period, therefore, scarcely exceeded two hundred, leaving about one hundred and thirty that have probably never been introduced into this country. In some of the best catalogues not more than one hundred of these two hundred are now inserted, in several less than one hundred, and in one above alluded to I do not think there are fifty. In Mr. Radclyffe's list of the best Roses at page 202, there are but twenty-five that belong to this period.

During the same five years there were about a dozen English seedlings and Roses sent out by our own growers, five of these are in Mr. Radclyffe's list, and some of the others are still regarded with favour.

These facts speak for themselves.

2. Who Raised Our Best Roses.—I quite agree with "D., *Deal*," that before attempting to estimate the merits of a new and unknown Rose from the character and description given of it by the raiser, it is some help to our estimation to know the name of the raiser (especially in the case of French Roses), that we may judge from his antecedents what amount of confidence may be placed in his announcements. Our own nurserymen, as a rule, do not affix the names of the raisers of French Roses published in their catalogues, unless for some distinctive purpose, as in the case where the same name has been given to two different varieties, which has more than once occurred; thus we have had Souvenir de Comte Cavour (Margottin), and another of the same name by Robert et Moreau, also Maréchal Souchet (Damaizin), and another by Guillot fils, and the name of the raiser is added no longer than while both kinds are retained in the catalogue. In the first instance, Robert et Moreau's Souvenir de Comte Cavour was dismissed the second or third season after its appearance, while Mar-

gottin's ranks among the best Roses in cultivation, although Margottin's name is no longer affixed to it. In the second instance, some growers retain Damaizin's Maréchal Souchet and reject the other, while some prefer that of Guillot fils. It is true that not much confusion is likely to arise in this case, as neither of them will now become popular, not even occupying a second rank.

The names of the raisers of our best Roses are scarcely known among cultivators in connection with particular flowers, and not always remembered by the most distinguished rosarians. It will, therefore, not be uninteresting to recapitulate some of the best Roses that appeared during the five years I have selected, in connection with the names of the raisers. It will serve to remind the reader to whom we are indebted for them, and to judge from these data what amount of credence may be placed in the announcements recently published, and ably commented on by "D., *Deal*," but which it must take at least two seasons to prove.

I take for my basis the list given by Mr. Radclyffe, or, more correctly, those of that list that were introduced during the period; there are twenty-five, exclusive of English Roses. To these I add others, not of equal merit, but so good and generally approved that they will continue in favour till surpassed by others of a similar character. I may be pardoned for alluding here to a former article, my statements in it having been misunderstood by the correspondents who followed on the same subject. In giving a list of the best Roses of 1865 it seems to have been inferred that I had put them down as being *the* best Roses, whereas it was only intended to point out which were the best of that particular year.

There is a difference of opinion regarding four in Mr. Radclyffe's list—viz., Duc de Cazes, General Washington, Sœur des Anges, and Professeur Koch. The first, though unsurpassed in its colour and size, opens badly, and too frequently yields a large proportion of imperfect flowers to only one good one. If it were constant, and as fine as Mr. Radclyffe grew it at Rushton, its place in the first rank would be indisputable. The fault of not expanding is still more applicable to General Washington, which rarely produces a perfect flower. Sœur des Anges is partly objectionable from the same cause, as well as inconstancy in colour, which probably arises from its being a sport. Professeur Koch is worthless here, but as Mr. Radclyffe is confirmed by Mr. W. Paul and Mr. Rivers, the authority for giving it a first place is too strong to controvert.

With the above qualification I submit a list of the best Roses sent from France during the five years 1861-5, with the names of the raisers.

EUGÈNE VERDIER.

Madame Charles Wood	Dr. Andry
Professeur Koch	Rushton Radclyffe
George Prince	Madame Versehaffelt
Madame Victor Verdier	Leopold Premier
Prince Camille de Rohan	Alpaïde de Rotalier
Madame Caillat	Maréchal Niel
Joseph Fiala	

The foregoing list shows that we are indebted to M. Eugène Verdier for several of our best Roses, notwithstanding the severe censure that has been occasionally passed upon him on account of the great number he sends out annually. That he does this to a fault cannot be denied, and it would be well if he withheld the inferior kinds. I am not quite certain if I am correct in assigning Leopold I. and Alpaïde de Rotalier to him, having mislaid or lost his list for the years in which these Roses were sent out. Maréchal Niel was raised by an amateur named Pradel, but *mis en commerce* by M. Eugène Verdier.

CHARLES VERDIER.

Duchesse de Caylus	Vicomte Vigier
Madame W. Paul	François Lacharme

The first two are very properly in Mr. Radclyffe's list. The last is a superb Rose, but of weak growth.

LACHARME.

Charles Lefebvre	Xavier Olibo
Alfred de Rougemont	Madame Charles Verdier
Baron A. de Rothschild	

To Lacharme belongs the honour of raising the best crimson Rose known. The last two, I am inclined to think, require further trial.

MARGOTTIN.

Souvenir de Comte Cavour	Jean Goujon
Mdlle. Amélie Halphen	Rev. H. Dombrain
Charles Margottin	Louise Margottin

Nos. 3 and 4 have been proved here to be well worthy of a place in the Rose garden, though somewhat too rough for exhibition purposes. 5 and 6 are Bourbons not yet surpassed in their class for colour and form.

GRANGER.

General Washington	Duc de Wellington
Mauriee Bernardin	Leopold Hausburg
Baronne Pelletan de Kinkelin	

2, 4, and 5 are the best.

GUILLOT FILS.

Eugène Verdier	Abbé Berleze

No. 1 is distinct and good.

GONOD.

Madame Moreau	Achille Gonod	Celine Gonod

No. 3 is a very pretty Bourbon of satiny rose colour, with slightly incurved petals.

OGER.

Sœur des Anges	Belle Normande

LECOMPTE.

Maréchal Vaillant

One of the best and certainly one of the most Perpetual Roses known. I have had blooms of it in all weathers, from the end of May to the middle of December, in the past season.

TOUVAIS.

Duc de Cazes	François Louvat
Semiramis	Julie Daran

The last two must give place to many better in the scarlet crimson class.

DAMAIZIN.

Alphonse Damaizin

Of perfect form and colour, but hardly strong enough in constitution.

PORTEMER ET FILS.

Pierre Notting	Charles Wood	Jean Rosenkrantz

LIABAUD.

Clemence Joigneaux	Mons. Boncenno	Madame de Canrobert

The third was one of the best, if not *the* best Rose shown at the National Show at Kensington last summer; it was in Mr. Cant's box. Like too many other fine Roses, as Furtado, Vidot, and Mdlle. Bonnaire, it is reported to be not sufficiently vigorous to be a first-class kind.

LEVEQUE ET FILS.

Duc de Rohan	Elise Vilmorin	Madame Derreux Donvillé

All of these are surpassed by others of similar colour. No. 1 is in Mr. Radclyffe's list. No. 3 is very good.

JAMAIN.

Madame Boutin	Marguerite de St. Amand

Both first-rate. No. 2 is probably the best light Hybrid Perpetual in cultivation.

By stretching my leniency to its utmost, I can find but fifty-seven out of three hundred and thirty sent out during the five years 1861-5 that I consider at present to be worth cultivation. To the rosarian it will be evident that many of these must be dismissed before long.—ADOLPHUS H. KENT.

(To be continued.)

THE GREAT SHOWS OF 1867.

WHILE taking note of the dates fixed by the various societies for holding their great fêtes for 1867, I have been sorry to observe that the National Exhibition at Manchester and the five-days Show of the Royal Horticultural Society of London are appointed so that it is impossible for the same exhibitors to attend both Shows. I think this is much to be regretted, as no doubt the object of both Societies is to collect into one focus as much of the horticultural and floricultural skill of the country as possible, and, of course, by so doing, they deserve the liberal support of the public. In those respects the one is sure to interfere with the other. Of course the Royal Horticultural Society has a right to be looked upon as the premier Society, but as the Manchester folks had advertised the date of their week's Show long before the Royal Horticultural Society gave notice of theirs, would it not be a graceful act to pay some deference to that which had every prospect of affording the toiling thousands of the great emporium of trade such a feast of beauty as they never saw before? As one who has not the slightest personal interest in either fête, I think it a very great pity that some arrangement could not be made by which the two great Shows should be made available to all exhi-

bitors, and doubtless there are such, who wish to attend both gatherings.

It is a pleasing thing to see these Societies profiting by the example set by the International Horticultural Exhibition of 1866, and determining to keep their fêtes open for nearly a week; thus, by varying the price of admission on various days, affording an opportunity to the millions to pay pleasant court to Flora and Pomona. It is now a recognised fact that if shows are to pay and societies to exist, the basis of their constitution must be widened in the matter of admission, so that the general public can have an opportunity of seeing the gorgeous flowers and fruits brought together on such occasions; and I think that this, the first great attempt of "Cottonopolis," with its toiling thousands, should have as little opposition as possible.—D. Thomson.

P.S.—In the advertisement of the five-days Show of the Royal Horticultural Society, which appeared in the last Number, you have printed July for June.

[The dates given were those sent to us. A corrected advertisement appears this week.]

ROYAL HORTICULTURAL SOCIETY.

Weekly Show, *December 22nd.*—Mr. Wm. Bartlett, Shaftesbury Road, Hammersmith, was awarded a first prize for a collection of Primulas, &c. Mr. B. Brown, gardener to R. H. Wyatt, Esq., Wandsworth Lodge, Upper Tooting, had also a first prize for a collection of flowering plants. A collection of plants consisting of Camellias, Hyacinths, Primulas, Tulips, and Heaths, was exhibited from the Society's Garden, Chiswick. Mr. B. Brown, gardener to R. H. Wyatt, Esq., obtained a first prize for a collection of fruit; and Mr. T. Neale, gardener to R. A. Cartwright, Esq., Edgcott House, Banbury, was awarded an extra prize for a Smooth-leaved Cayenne Pine Apple.

December 29th.—On this occasion an extra prize was awarded to Mr. W. Bartlett, Shaftesbury Road, Hammersmith, for a collection of flowering plants; and a collection of Cinerarias, Heaths, Mignonette, &c., from the Society's garden, Chiswick, completed the exhibition.

MARKET STRAWBERRIES.

One word more, and I have done with this subject. I do not recede from my original list. The varieties I named are all sure and great croppers. It is pleasing to me to find that "Ecila" adopts these sorts named by me in my two last communications: Empress Eugénie, Frogmore Late Pine, Marguerite, Sir J. Paxton, and Wonderful. Patrick's Seedling is a good cropper, and a good Strawberry. With regard to the others, British Queen is not to be depended on. Amateurs, even, are hereabouts giving it up. Cornucopia was raised by the late Mr. Nicholson. I do not know it. Comte de Zans, Alice Nicholson, and another Strawberry, were kindly sent to me by Mrs. Nicholson this spring in an envelope; but they were so much dried, that, though carefully potted, they died. La Constante is a wonderfully good Strawberry, handsome, level, beautifully formed, of distinct and delicious flavour, suited to strong land and a northern aspect. It is a great cropper, and would be an admirable market sort were it not apt to burn in hot seasons in some lands, and slow to reproduce its plants. It is of the same tufted formation as Rivers's Eliza. Mr. W. Prince, of Flushing, says, "it burns considerably, and is a poor cropper!" I agree to the former, not to the latter. Myatt's Eleanor is a noble wedge-coned Strawberry, but a fitful cropper. It is entirely superseded (also Elton Pine, a very good market sort), by the four late Strawberries, Wonderful, Cockscomb, Dr. Hogg, and Frogmore Late Pine. They are hardy, sure setters, great croppers, mostly large fruit, and more or less Queen-flavoured.

As Wonderful and Frogmore Late Pine seem to be agreed upon, let me induce market gardeners to try Dr. Hogg and Cockscomb. These four will distance British Queen and Carolina Superba. If flavour is not a matter of great consequence, Cremone's Perpetual, Hooper's Seedling, and Ananas Lecoq would do.

I agree with "Ecila" that it is desirable that market gardeners and gentlemen's gardeners should relate their experience. I shall in due time be found to be right. I am no puffer, and will be no party to appraising commodities, no matter by whom they are raised or sent to me, to the deception of the British public. I have always been guided by the nature, and not by the names of persons or things. I have "The Lady," strong plants, on trial. It will gratify me much if I be able to speak favourably of her. Mr. Turner says Dr. Hogg is first-rate.—W. F. Radclyffe, *Okeford Fitzpaine.*

PLANTING PEAR TREES.

My principal motive for writing is to state my objections to the practice which Mr. Abbey recommends. "Holes 9 feet square (see second column, page 460), should be dug, and of such a depth that the stem will not only be as deep in the soil as it was before, but so that the union of the stock and scion will be covered to the depth of 3 inches."

No hole in any cultivated garden need be more than from 3 to 4 feet in diameter and 20 inches deep, and the covering of the junction of the bud or graft with the stock, as fully pointed out in your columns last spring, pages 180, 193, leads to injurious consequences, for besides placing the tree by far too deeply in the soil, it induces the putting forth of roots from the graft, by which the effect of the Quince stock in giving fertility is destroyed. Here, where there are more Pear trees old and young on Quince stocks than in any other garden in Europe, great care is taken every spring when the ground has been slightly dug to bury the weeds, which in seasons like this we are reluctantly compelled to do, for digging among bearing trees should be avoided. Great care is taken to withdraw all loose earth from the base of the tree, so as to leave a space of about an inch between the swollen junction of the graft with the stock and the surface of the ground. This mode of culture has been followed here with Pear trees on Quince stocks twenty to twenty-five years old, and is the only sound method of culture.

In planting, I may add a word of advice. Before the tree is placed in the hole throw in some loose earth in the form of a mound in the centre of it, tread it gently, and on this place the tree; no sinking will then take place, so as in wet soils to have the roots in a basin of water.—T. R.

CATALOGUES.

With regard to the subject entered upon by your correspondent, "Monticola," I may observe, that terrible as is the cattle plague, the catalogue plague is in some respects worse. Though the symptoms are different in the two, they are equally contagious and destructive, the former of bulls and cows, the latter of truth and confidence. Queen, Lords, Commons, the farmer, the justice, and the peasant, have with one will agreed to stamp out the cattle plague; but the catalogue murrain still rides rampant.

The progress of this terrible complaint was arrested for a time a while ago, by a few indignant spirits, and the name your humble servant gave to the "fat" catalogues will cling to them for ever. An abatement of symptoms, temporary, alas! and illusive, ensued, only to be succeeded by an outburst more violent and destructive than ever. Fatty degeneracy of the worst form has set in; who shall arrest the downward course? Let the young, bold, muscular horticulturists of the day, and there are plenty, who are the consumers of these wares, set their faces at, turn up their noses at, shake their heads at, drive their quills at, and withdraw their support from, the great imposture.

Let me recommend to a certain large class of your readers, a good commercial speculation—to wit, a catalogue which shall "tell truth and shame the ——." It would pay, sir—it would pay.—***.

EARLY PEAS.

Seeing a remark about Peas in The Journal of Horticulture, I am induced to say a word in favour of Dickson's First and Best. I have grown for the last ten years several of the new Peas as they came out. As regards Dickson's First and Best, I can most unhesitatingly affirm that it is the very best early Pea I ever grew as regards earliness, productiveness, and quality. It may be that there is a difference betwixt "Theta's" soil and mine, as it is a well-known fact that what will do well in one place will not answer satisfactorily in another; but if the Pea in question does not suit "Theta's" soil, that is no

reason why it should not suit that of other localities, and I would recommend gardeners to grow it, and prove it for themselves.—J. Eastwood, *Gardener to E. Nathan, Esq., Didsbury.*

OUR VINES.

"Our Vines," as we always call them, though they belong to Cousin Herbert. He lives near to us, just over the wall—an ugly red brick wall, built by a neighbour who did not like us. Well, these Vines had been thought and talked about for years. Great piles of sods had been laid together in heaps until they crumbled into soft mould from very old age. Every known preparation had been made for them, everything done for them that could be heard of or read about in books, from McIntosh and Thompson down to the last weekly and monthly magazine. Great thought, and talk, and curiosity, gathered about this was-to-be new vinery, some saying one thing, some another, all the household seeming to have a right to argue and dispute, as if Cousin Herbert had not long since come of age. Uncle Tetley said, "It was a very foolish idea, would not pay cost for the land covered, only cause their highly-rated house to be rated higher still;" and Aunt Margaret said, she "was sure they were not rich enough to have such a place, and that every mouthful would cost a shilling, if, indeed, we ever managed to grow any." But yet the work went on, foundations were dug, beeks pored over, fresh soil laid up in heaps for fear there should not be enough, scrapings from the roadside, sods from a field and a neighbouring common—wherever a bit of grass grew that could be spared it was deemed to the great heap under the wall. How often this heap was contemplated I cannot tell, but it appeared ever to give satisfaction to the inspecter. Now it did crumble into pieces just like the dust soil found under old evergreens. It had rested idly under that west wall for five years, and when turned about had a rich moist look, for every bit of grass and fibre had rotted away. Then came cartloads of manure. This, too, was put down under the west wall; a west wind filled the house with its odour. Cook said she had "no need to season her dishes, it was done for her." Next came bags and bags of bone dust. Our wondering neighbours asked if we were going to open our stately mansion for a flour depôt. Then came loads of leaf mould black as coal. "Grand stuff this," said the man who brought it, "fifteen year old if it's a day, worth its weight." Next came lime rubbish. Cousin Herbert had had some trouble to obtain it. It was the plaster, and dust, and bits of lime from old bricks, and the pulling down of a bank just furnished the opportunity of obtaining it. This lime rubbish was put down alongside of the leaf mould, and a gentle breeze blowing put a thin coating of it over everything, as if the first snowstorm had come. Then all the woollen rags we could find were put together, old coats, waistcoats, and such like torn into shreds, or cut into small pieces and laid by the side of some crushed bones, the last arrival. So all the heaps were side by side under the wall, fibry loam, leaf mould, manure, crushed bones, lime rubbish, woollen rags, and bone dust—mounds of such strange size and appearance, I think poor Boffin would have been distracted.

During this time the fair structure was reared, space and capabilities for eleven Vines. Then the Vine-bed or border was made, dear me! with what minute care. A little soil mixed with the crushed bones forming the lowest deposit. "This is the solid food not yet proper for the infant Vines," said Cousin Herbert, as we stood watching. "They will have arrived at an adult age before they reach the ale and beef cellar, for you see they have to grow down as well as up." Then all the mounds were carried away bit by bit; even the woollen rags disappeared; layer after layer, first of one sort, then of another, till the border inside and out would hold no more.

What work there was about this border, to be sure; no one must dig in it, or tread upon it, or plant plants in it, or sow seeds in it. Cousin Herbert was so very particular he watched it night and day. I often wonder he allowed the weeds to grow. Then we had so much trouble, for Aunt Margaret would walk across it coming to our house, because she said it was nearer, though it only saved 3 yards; and Cousin Janet would in spite of all we could do or say, sow her Mustard seed in it. Poor thing! she never knew how often we pulled the seed up before it grew. I think the deposits must have been put in too lightly, or some father mole had chosen the site for the manipulation of a new home, for little hollows or sinkings we could not account for were constantly appearing. Uncle would have it somebody's hens came there to scratch; and yet they could not, for the holes were no larger than sparrows make in any bit of gardening done up with great care, and the more care taken with it the more they go there to bathe or roll themselves.

After this there came the eagerly discussed question, Where were the Vines to be purchased? "Oh," said papa, "I would not go to any of these men with their long puffing advertisements, it is all show and no good."

"No," said Uncle Tetley, "I would go to some quiet unheard-of experienced gardener."

"Yes, and then if they all turn out rotten you will get no recompense," said Cousin Herbert, looking down tenderly upon his new Vine-border; and well he might, for it was nearly all his own hard work.

"I would not go to a young man anyhow," said papa, "for he will think he knows everything, and yet if you go to an old one they will say he knows nothing."

"I am not sure all the Vines in the world are worth this," said Cousin Walter, rubbing the blisters inside his soft white hands. He had spent his Saturday's half-holiday helping his brother, and was not used to a spade and barrow. "I would go somewhere for them, where I could purchase them old enough to bear next year. There is no good in waiting until you are too old to enjoy them."

At last the decision was made, a nurseryman of high standing was chosen, the choice of the Vines left to his better and more practical judgment. A man was sent over with them to plant them, the vinery and border having been previously examined and declared almost perfect in their arrangements and ingredients. There were one Lady Downe's for the centre, six Black Hamburghs, two Muscat Hamburghs, and two Reeves' Muscadine.

It was an October afternoon, a clear white sky with crimson bars, a cold wind going up and down making hard lines and crosses in every pond and gutter, and crisping up the noisy autumn leaves. The sun shone into the new vinery for a few minutes, lighting up the empty space and touching the pale, thin, unpromising-looking canes, the return for so many pounds.

"You will not need to put a fire in here yet for the sake of the Vines," said the gardener who planted them, "but you must keep out the frost, or it will spoil your plants."

I will tell you about these plants some day if all is well.

"A fire, indeed!" said Aunt Margaret, "it will take a barrowload to fill that big grate; we cannot afford it, and coals rising every week. I think Herbert has gone clean out of his mind."

So at last we had our vinery, at which people laughed, and predicted doleful things. An amateur's Vines succeed, indeed! They needed a professional gardener to make them do that, and even then they did not always, and at Uncle Tetley's they kept no regular gardener, only a man once a-week or so to tidy up. "To think that a gentleman with a fine education should come down to wearing an old coat out at the elbows, and to dig, and mix up, and barrow, and tear, and work like a common man, all for the sake of growing Grapes better than his next door neighbour, was ridiculous." So said the gardeners about ——.

"I wish the Vines were at Jericho," said Cousin Janet snappishly, or growing still in that Bradford nursery, for you can talk about nothing else."

"I wish he had never built it," said Cousin Kate, "for I am afraid it will lead to nothing but trouble, and work, and cost, and dirt. Only this morning Herbert said, 'Now you girls must look after that place to see all goes right.' No, it will lead to nothing but bother, and dissension, and failure, utter failure; and instead of growing such Grapes as were never grown before, we shall be laughed at by the whole country side." Nor was this all; the servants complained, called the vinery "a nuisance." The one-day-a-week man refused to clean up about the boiler; as a great favour he would make the fire; but then the very best fires will not keep in for a week, and what was to be done then? An old man in the village was hired to do what others would not; but he was very expensive, and very troublesome; and cook said, "It was wearisome, for he was always going past her kitchen window either with ashes or clinkers. Sure as ever it was windy down he would go and scrape into his basket all the ashes he could find," and these ashes blew in at the windows, and under the doors, and filled every place and every thing, even the oven was not safe. Poor cook declared "she could not go anywhere, open a cupboard or drawer, without meeting with ashes. It was a very Pharaoh's plague." The housemaid said, "Sure as ever Saturday afternoon came, and the yard was scoured out, and no little doing it took, and all cleaned up, then they would bring either coals, or cinders, or

slack," and these had to be put down very near to the front-kitchen door. And certainly a great deal of fuel was consumed, for the old man burnt away at the coal, and often said he had the best fire for miles round; he had no thought about him, for the hotter the sun shone the more and more he put on the fire. It had no rest, no peace with him. When spoken to about it he took offence, and never made his appearance again. Then, too, all the dust, and dirt, and spoiled dinners, and mischief that happened in the house, were put down to the greenhouse. Aunt Margaret, who had lived with uncle Tetley many years, ever since his wife died, and had brought up Janet and Kate, was very much put out; she often said she would go away before the time of ruin came, for that vinery would prove to Herbert, if not to all of us, a very white elephant.

Things wore on in this uncomfortable way until December, when one evening just as it was growing dark, Kate came running across to our house in great trouble, exclaiming, "Oh, Maud, what shall we do? all our plants will be killed. The thermometer in the garden is standing below 30°. The greenhouse fire is out, the old man has not come, and there is no one to make it. What shall we do? Papa told the housemaid to see after it, and she walked straight up-stairs to Aunt Margaret, and gave notice to leave. The kitchen girl would have tried to make it, but cook kept her very busy, and would let her have neither fire nor wood. What must we do?

"We must go and make it, Kate. We have more plants than we can afford to lose."

"I wanted to do it, but Aunt Margaret said it was not a lady's work, and if I were bringing myself down to minding a furnace fire, it was a pity Papa had spent so much on my education."

"Never mind that, we must go."

So we pulled on our hoods, ran through the two gardens as fast as we could, tucked up our sleeves and flowing skirts, and commenced operations. It was a good thing Uncle Tetley was so fond of herrings, but for the old boxes I do not know what we should have done; with the help of a huge blocker they were soon chips, that day's *Times*, found by chance near at hand, for we dare not go into the house, was thrust into the long, narrow grate, wood after wood piled upon it, then coals, then a light put to it, and all shut up close, fire-door, and ash-door, and so close did they fit, not a ray of light reached us as we sat on the lowest step of the stairs in the splendour of a twenty-four dip candle. Our white petticoats were soiled, and no wonder, for dust from the coals, and ashes, and soot, and spiders' webs, lay thick upon the walls, and the flue-doors, and in every corner. Three cell-like cellars opened out before us, for coals, cinders, and slack; into their gloomy darkness we dare not penetrate, they lay beyond the reach of our poor rush-light.

"It does not make a bit of noise, Kate, it must be going out."

So we opened the door and tried to look in, we could see nothing for the volumes of smoke that rolled out, half blinding us. This soon cleared away, for our fire would not burn, was dying out as fast as it could, smothered, though we knew it not.

All this time Master Frost came on, nearer and nearer; already he stood close by, working fast with his icy tools, carving strange fantastic figures on the glass, roof, and window, travelling round every square of glass, seeking any point however small for entrance; and then we knew full well, ruin and death, death and ruin we could not avert, must follow.

Again and again we tried to make our fire burn, thrusting in wood and paper and coal, and found out after an hour's toil that it would burn if we would let it have air. All by chance we left open the ash-door, then crackling and sparkling up went the fire with a roaring noise, as if to make up for lost time. Once more we sat down upon the stairs to watch and wait, no use in going up into the vinery, and so letting in great gushes of frost. The sun had shone upon the house all day, and it had not been opened, so the chance was it might contain enough heat to set at defiance, for an hour or two at least, the outside cold.

What beauties we were to be sure! Our elbows sooted, our arms grimed, as if some Indian chief had painted us for his especial pleasure. And, then, what hands we had! Kate declared "we should have to take in washing for a month before they were clean."

When they knew all about it, how Uncle Tetley laughed, and Aunt Margaret scolded, and Cousin Herbert said, "It must not happen again, something or other must be done." And yet what? for Aunt Margaret would not have a man hanging about the house, doing nothing two-thirds of his time, and then to have a regular gardener, why that would run away with more than £1 a-week, and to get a man or boy for an hour or two each day was just impossible; and then, too, Cousin Herbert wanted to manage the Vines—have them all his own way. And we wished to have our plants all to ourselves without a gardener to knock them about, and call them his, and to look cross when we cut a few flowers for our pastor's wife. So we talked about it at home, and at Uncle Tetley's, and were doing so one day, when Mary, the cook's help, a young girl from the country, came into the room with some coal; in her eagerness to speak, she dropped her box down with a great noise, saying, "I am sure I could manage that fire if you would teach me, Miss Kate."

So we set to work under Cousin Herbert's directions, receiving our lessons night and morning, and duly imparting the same to Mary, who acted under our supervision. A month and the fire was managed to everybody's satisfaction. There might be mistakes sometimes that could not be prevented; but we kept the frost at bay. Cousin Herbert always made up the fire safely for the night, that was his portion of work, his duty.

My own opinion is, many a young girl would manage a greenhouse fire as easily as she does one in her kitchen grate, if she were rightly taught. Kate had often called the little boiler-house the darkest, dirtiest, and most badly-planned one in the world. It soon changed under Mary's management, brush, and broom, and lime, making short work of ashes, and coal dust, and spiders' webs, and we could walk down into it without soiling our feet, or having to take extra care of our skirts.—Maud.

(To be continued.)

[Heartily, very heartily, the Editors respond to your good wishes. They thank you for your kindly greeting, and wish for you and yours a very merry Christmas and a truly happy New Year. *Their* Christmas would be merrier, and *their* New Year happier, if they knew more of your name than "Maud," and more of your whereabouts than is revealed by the post-mark.]

POTATOES.

In page 462, Mona's Pride is highly eulogised, in the following page it has a poor character. Mr. Myers, an experienced cultivator, in his advertisement last spring gave it a high character. I have found it not earlier than the Ashleaf, and so inferior in flavour and liable to disease as to be worthless. What, then, can we say to opinions so equally balanced? I have been for many years a sort of amateur cultivator, trying all or nearly all the varieties to test their qualities, merely to gain a knowledge of the sorts best adapted to the wants of my family, and have come to the conclusion, that except the Ashleaf and two or three other early sorts, there is scarcely a variety that can be safely recommended for all soils and climates, as they differ to so great an extent according to the nature of the soil, and, I may add, of the season. In 1862, 1863, and 1864, I imagined that my choice was fixed for life—Ashleaf forced for spring, in the open ground the same sort for summer, the Lapstone for autumn up to Christmas, and the King (Hudson's), for early spring. They were all perfect, and when steamed and brought to table with their jackets bursting, one often declared that one could dine off them. Alas! that this is for the present passed away.

In 1865, the hines of all but the very late sorts died off in August from the disease, but as they had finished their growth and the tubers were particularly clean and sound, I thought but little of it. Towards the end of the month the tubers of the Royal Ashleaf became too firm and had lost their flavour. As these had been our grand resource for the summer and early autumn and had never failed, we were loth to credit the fact. It was too true, however, and so we turned to our autumn favourite, the Lapstone, steamed and served as usual To our discomfort we found the flesh yellow, firm, and flavourless—no bursting of jackets—so for the first time for many years paring and boiling with salt, and drying-cloth *secundum artem*, was resorted to. They were drier, but still flavourless, and this lasted all through the winter, not only with the Lapstone, but with the King and Pink Fluke, both hitherto so good, and thus two unsatisfactory Potato seasons have nearly passed; for this season they are exactly of the same character —there is no satisfaction in eating them. I may add, that in 1865 I planted for trial eight or ten of the popular sorts of Kidney Potatoes, all of which proved as unsatisfactory as my hitherto above-mentioned favourite kinds. The question is, Is this disagreeable change to be permanent? I hope not, but

I am thinking of a change, and intend to try one or two of the white floury kinds, which I have up to this time considered deficient in flavour. I am, however, firmly convinced that soils influence the quality of Potatoes to an extent greater than has ever been calculated: hence the necessity of a trial before any variety is planted to a large extent. I may add, that I changed my seed of the Lapstone last spring. Its produce is, if anything, inferior to that from my own seed. In 1865, "The Boon" was as described by "D.," page 463, and the Silverskin but little better.

The "disease" has this season assumed a curious phase. Here formerly if Potatoes were taken up early, just before being ripe, and exposed to the air for a few weeks, they always proved sound and healthy seed. This season the converse of this has taken place. A large quantity taken up at the end of July and laid on the surface of the soil for two or three weeks till they were perfectly green, are now a mass of rotteuness, while those taken up some weeks later and stored in the same place are comparatively sound. With four early kinds—Early Ten-Week, Coldstream Early, Shutford Seedling, both free-bearing excellent early sorts, and Early May, all planted on the same day, and all taken up at the same time fully ripe, and free from the disease at the time, it has been more violent and destructive than I ever remember. They were spread on the surface of the soil for a week or two till green, then placed in shallow baskets, which were placed in a shed exposed to the sun and air. In October, on examining them previous to storing them in the cellar, two-thirds of them were found covered with patches of mould and perfectly rotten. The state of the atmosphere which, as is well known, was constantly overcharged with moisture, must have encouraged the growth of the fungus which so mysteriously destroys one of our most valuable products. Hitherto exposure has acted as a preventive, but this season apparently as an incentive to disease. Thus are science and practice alike baffled, and we must bow to that which no man can comprehend, the will of the great Ruler of All.—Solanum.

HYGROMETERS.

We can generally learn from any horticultural work the temperature which will suit the plants which we wish to cultivate; but we seek in vain for any definite directions as to the degree of atmospheric moisture which they require. It was, therefore, with much pleasure that I lately saw in a contemporary a recommendation from Mr. D. Fish, that during the season of active growth the wet bulb should stand 4° below the dry, and during the ripening period from 10° to 15°.

Observations upon this subject have been few, not only because gardeners in general have not been sufficiently alive to its importance, but also because of the trouble of keeping in working order a wet-bulb thermometer, and the difficulty of finding for it a suitable position in the house, sheltered from the sun and cold currents of air. Some time ago I tried a cat-gut hygrometer. I spliced together two A violin strings, and thus got a length of about 8 or 9 feet, which being passed over a brass pulley took up only 4½ feet. One end was fixed, and to the other was attached a quarter-pound weight. It acted, it is true, but it did not respond sufficiently quickly to increased moisture to be of any practical utility.

Two years ago I had an illustration of the importance of the subject. One side of an orchard-house was filled with Figs ripening off their second crop; the other side was filled with plants of Physalis edulis. There was no syringing, but the Figs were poor in flavour. It occurred to me that as the Physalis was a thirsty plant, requiring a large quantity of water at its roots, the air might be too damp, so I removed the Physalis, and the Figs became perfect.

It is possible that some cases of Peaches not ripening well in orchard-houses may arise from some mismanagement as regards moisture either in the air or at the roots; but it also may arise, as your correspondent "G. H." thinks, from a deficiency of heat. In my own case, this, I believe, is the cause why so few of the Peaches in an unheated house, though well swollen and well coloured, are really sweet. The house has no sun after three or four o'clock, and there are too many tall trees near it. In that exceptionally warm year, 1858, the Peaches were exceptionally good, and all that could be desired.—G. S.

Mildness of the Season.—On this shortest day of the year, fine bouquets of Primroses may be gathered in our neighbourhood, and in my garden (on a sunny bank, it is true), several plants of Keens' Seedling have fine trusses of bloom. Besides this, in the open garden, but in a sheltered spot, a small Hampton Court Vine has not yet lost its leaves, which are at this moment as green as they were at midsummer.—H., *Ventnor, I.W.*

ICE-KEEPING.

Should we be deficient of ice this season as we were last, I think the following account of ice-keeping may be worth a place in your columns.

I was not able to take any ice from the ponds here last season, till the first and second days in March, and then it was only about 1½ inch thick. As we had a fall of about 2 inches of snow on the 27th of February, I set a man to work to put together in a ridge a quantity of snow, by pushing it up with the back of a wooden rake, and on the 1st and 2nd of March, I filled our ice-house with ice and snow. I began with ice, putting in three cartloads of ice, and then one load of snow. I levelled the ice before putting on the snow, spread the latter over the ice, and rammed all well down. For this purpose I used a cylindrical piece of wood 9 inches in diameter, and 14 inches long, into one end of which I had made a hole and driven in a plain stake for a handle, so that a man could stand upright, and, taking hold of the handle with both hands, walk over the ice and snow, and ram all well down. Two or three men can ram each layer well in about fifteen minutes. I kept on in this way till I had filled the well, which is one of the old-fashioned barrel-shaped wells, 16 feet deep, and 12 feet wide at the middle. Now, all gardeners who are in the habit of storing ice, know within a little how much ice and snow I had in this well. Carts vary much in size; twenty-eight of our cart-loads will fill this well, if the ice is thick enough to build up a little above the sides of the cart; but when ice is very thin we cannot do so. I have stored away ice in wells and stacks for the last thirty years, and I never knew ice keep so well as the snow and ice have done. I took from the well no less than twelve bushels of ice every week for three months, and used some before for dinner-parties, so I have since, and now there is in it more than 2 feet thick of ice, and it has not wasted more than 15 inches from the side walls. I took some ice from this well yesterday (December 18th), and no one would know that there is snow amongst it. The ice is rather rough-looking, but it is all ice now.

I do not think we shall be so short of ice this season. I think we shall have plenty in January; but if the ice be 3 inches thick when I fill the well, I will put snow with it, if I can obtain it clean, but at present we have a great many leaves on the park.—C. Short, *Flixton Hall Gardens.*

VINES AND VINE BORDERS.

So much has been written by practical men about the formation of Vine borders, one recommending them to be 5 feet deep, another 3 feet, whilst another grows full-sized, high-coloured, and fine-flavoured Grapes without any prepared border, that an employer of labour who wants to lay out his money to the best advantage is perplexed to know how to proceed.

I do not think the five-feet-deep borders are the best for growing Vines. Some years ago I had the management of three vineries where the Vines were planted in such borders, and in all three houses the Grapes were liable to shank. The roots of the Vines had a tendency to go straight down to the bottom of the borders in search of food instead of spreading out in a horizontal direction as they ought to have done. I have dug these borders over, and never found a root near the surface. In the first house which I will mention were planted Black Hamburgh, Red Frontignan, and Chasselas Musqué; the two latter were grafted on the Black Hamburgh, but even then the Grapes were liable to shank as soon as they were ripe. The Black Hamburgh, being of a hardier nature, succeeded better.

In the Muscat-house matters were much the same. Sometimes the stalk of a single berry, sometimes the stalks uniting several berries, and in some cases whole shoulders, would shank without any apparent cause. In this house the Muscat of Alexandria Vines were the least liable to shanking their fruit, whilst the Canon Hall Muscat on its own roots was the most so, and the flesh of this sort had not that degree of firmness which it acquires under the best cultivation. This is a Grape

seldom seen in perfection, although one deserving of extensive cultivation. It is, I think, very much improved by being grafted on the Black Hamburgh. The best fruit of it which I have seen was from Vines grafted on that sort, the border being composed mostly of the natural soil of the garden.

In the third house were planted Black Hamburgh, and, I think, Royal Muscadine on their own roots. This house used to do better than the other two; but I always thought the Vines would have succeeded still better if the roots had not gone down so deep, and further experience has confirmed me on that point.

With regard to the next Vines that came under my notice, the borders were what would be called shallow—that is, from 2 feet 3 inches to 3 feet deep, and they were made at first about half the width they were ultimately intended to be. The soil was taken out to the required depth for about 6 feet wide on both sides of the front wall, so that there was a prepared border on each side of the wall, one outside and one inside. The soil was composed of the top spit of an old pasture, without the addition of manure of any sort. The Vines were planted on a ridge raised about 9 inches above the floor line, a single rod was taken up from each plant, and nearly in every case the Vines reached the top of the house the first season, making strong short-jointed wood, and well ripened, without the assistance of artificial heat, even in the case of the Muscats. In the following season they were cut back, the rods being left from 8 to 16 feet in length; and being carefully started in the spring they broke regularly, showing in most instances three bunches at each joint. Of course the greater part of these were removed at once, leaving in the end only from three to six bunches on each Vine, so that they ripened these well, and again made strong growths. They were supplied during the growing season with liquid manure, but not in large quantities, about three or four times in the course of the season. Next year the Vines carried a good average crop of from six to twelve bunches each. I did not see any of them weighed, but I judged some of the Black Hamburgh bunches weighed upwards of 3 lbs. each; they were beautifully coloured and of excellent flavour.

I will now notice the state of the roots in these vineries. In forking the borders over in order to add some farmyard manure, the roots were found to have spread in a horizontal direction to the outside of the prepared border, quite close to the surface. If I had had the sole management of the borders, and if the materials could have been obtained, I would have proceeded in this way: I would have thrown equal quantities of fresh horse-droppings and cowdung into a heap together; they would soon have heated, and if the cowdung was wet, as it sometimes is, it would have dried in the course of fermentation. After the heat was gone—(the heap ought not to be allowed to heat violently; if it do so it should be spread out on the floor of the shed. I presume, of course, that it is in a place where the rains will not reach it)—to every two barrowloads I would have added one of turfy loam, and surface-dressed the Vines with the mixture instead of digging amongst the roots. The repeated waterings would have washed the nourishment down; and the manure being kept on the surface, the roots would be near it too, and there they would be better able to feed the Vines than if they were down at the bottom of five-feet borders, and that is where they will go, especially if bones or other manure be added to the loam when the borders are made.

Since then I have had the charge of forming the borders for two vineries, and I was prevailed upon to add some manure to the loam when the borders were made; a small quantity of lime was also added, and the Vines under the same treatment have not done so well as in the case when only the turfy loam was used. The borders were rather more than 3 feet deep, and scarcely any roots are to be found near the surface. I have therefore come to the conclusion that turfy loam without the addition of any manure the first season is the best material of which to form a Vine border. There is plenty of nourishment to be found amongst the decaying roots of the grass the first season, and manure can always be added either in the liquid form or by means of surface-dressings.

In the preceding observations I have simply recorded the results of my own experience. When I say that borders made without the addition of bones or other manures are the best I do not intend to assert that borders formed in the other way will not answer. I have no doubt they will, otherwise practical gardeners would not be found to advocate them; but I hope our amateur friends will not be disheartened because they cannot go to the expense of having flagstones and other expensive materials buried at the bottom of the border, because I am fully convinced that they are not necessary.—J. Douglas.

PSIDIUM RADDII.

I wish your correspondent who signed himself "Raddii, *Peterborough*" (December 26, 1865), would state whether the above fruit is superior in quality to P. Cattleyanum, and whether it is equally hardy. Of the latter there are two varieties, the fruit of one being spherical, of the other somewhat Pear-shaped. The nurseryman of whom I bought my plant assured me that it required a stove, and it certainly came out of one, but it soon accommodated itself to a slightly-warmed orchard-house, and fruited abundantly. On two occasions it stood a temperature of 36° uninjured. The fruit seemed to me decidedly inferior to the larger tropical Guavas, so I gave up growing it.—G. S.

HOT AIR FROM A KITCHEN RANGE.

"Rusticus," in the Number for December 18th, inquires how he can utilise a fire situated in the kitchen, of which the wall containing the fireplace forms the side of an out-building. This he can easily accomplish by passing an ordinary piece of gas-pipe, bent at two right angles, through the fire, so as to let one end project into the room towards the hearth, the other into the out-building. The heated air in the intermediate part rises into the out-building, and the air rushing in from the room to supply its place passes in its turn through the heated tube and is delivered warm into the out-building. This simple plan can also be advantageously used to increase the heat of ordinary stoves, whether in the greenhouse or hall.—J. M. F., *Streatham*.

ENTOMOLOGICAL SOCIETY'S MEETING.

The December Meeting of this Society was held at Burlington House on the 3rd inst., the President, Sir John Lubbock, F.R.S., in the chair. Amongst the donations to the Society's library received since the last meeting were the Memoirs of the Linnean Society of Normandy, the "Hymenopterous Memoirs" of M. Sichel, &c. Six new members were balloted for and elected.

Mr. W. F. Evans, F.L.S., sent for exhibition a number of insects, chiefly Beetles (especially the beautiful Pyronota festiva, belonging to the family Melolonthidæ), which had been found amongst wool imported from New Zealand.

Mr. Stainton exhibited living specimens of Gracillaria scalariella, bred from larvæ found at Cannes in the South of France, mining the leaves of Echium vulgare, communicated by M. Milliere; also some flat pouch-like galls, obtained from Mentone, near Nice, formed on the leaves of Pistacia lentiscus, apparently by Aphides, but which were inhabited by a Phycideous larva.

Mr. Inuson exhibited a box of insects collected by Mr. W. Hume in the vicinity of Rio Janeiro.

Mr. Daer exhibited a chrysalis of the common Tortoiseshell Butterfly, from each shoulder of which depended a slender filament nearly as long as the chrysalis itself.

The Secretary communicated a notice on the employment, in tropical countries, of mahogany timber of Western Australia, that kind of wood not being subject, from its peculiar qualities, to the attacks of White Ants, which are so destructive to all other woodwork in hot climates.

Dr. Sharp exhibited Stenus major, a species of Staphylinidæ new to the British lists, taken at Southend.

Professor Westwood communicated a biographical notice of the late Mr. S. Stone, whose collections of insects, nests of Wasps, &c., as well as his antiquarian collection, had been presented to the museums at Oxford. He also exhibited a number of specimens of the Gipsy Moth, Liparis dispar, reared by Mr. Briggs, of St. John's College, Oxford, showing the variations which had resulted from feeding some of the individuals exclusively on White Thorn and others on Elm. The females of the latter set were invariably crippled, and the whole of them sterile. This exhibition gave rise to considerable discussion. Professor Westwood also communicated a letter from Edward Holdsworth, Esq., of Shanghai, containing a description of the caterpillar of the beautiful Moth Bombyx Selene.

The discussion, commenced at the preceding meeting, on Natural Selection and Mimetic Analogies, was resumed, and continued at great length, being participated in by Dr. Sharp, Messrs. Bates, Belt, Stainton, Weir, Wallace, McLachlan, Professor Westwood, and the President; during which the immunity of the Heliconian Butterflies in South America from the attacks of birds (suggested by Mr. Bates as a cause of the mimicry which he assumed to have been adopted by

certain species of Pieridæ), was confirmed by Mr. Belt, who stated that he had observed, for a considerable period, a particular nest of a pair of insectivorous birds at Maranam in Brazil, and had noticed that although they captured other Butterflies, Dragon Flies, &c., in great numbers for the food of their young, not a single Heliconian was taken, although flying about slowly in great quantities at the time, and close to the spot. Mr. Stainton also stated, in proof of the distaste of birds for certain species of insects, that on one occasion he had captured a quantity of Moths flying round a lighted lamp, the whole of which, with the exception of a single Spilosoma Menthastri, proved to be the common Noctua exclamationis. On discovering this next morning, the whole were thrown to some young turkeys, which greedily devoured them, except the Spilosoma, which they could not be prevailed upon to touch; and Mr. Weir stated that he had offered the larvæ of the same species of Spilosoma to some birds which he had kept in an aviary, and that in like manner they had refused to touch them.

Mr. McLachlan read two papers, entitled, "A Description of a New Genus of Hemerobiidæ," and "A Description of a New Genus of Psocidæ."

New Orchid.—An Orchid has lately flowered in the collection of Mr. Thomas R. Tufnell, at Spring Grove, which is pronounced by Professor Reichenbach to be an entirely new species of Epidendrum. Herr Reichenbach proposes that it shall be called Epidendrum eburneum, in consequence of the ivory-like appearance of the flower. The plant has been figured by Mr. Fitch, for the authorities at Kew, and will appear in the "Botanical Magazine" shortly.

BARLASTON HALL,

The Seat of Ralph Thomas Adderley, Esq.

Barlaston Hall lies about five miles south-east of Newcastle-under-Lyme, five miles south of Stoke-on-Trent, and half a mile north of Barlaston station on the North Staffordshire Railway. The village of Barlaston is delightfully situated near the summit of a high acclivity on the east side of the vale of the Trent.

The Hall is a handsome mansion near the north end of the village, and, viewing it in the distance, appears well sheltered with forest trees. I passed into the grounds through a plain entrance-gate by a commodious lodge. The carriage-drive to the house is through a long avenue of Limes, which skirts the drive on either side, and terminates on the east side of the mansion. A footpath to the right, a little beyond the lodge, leads to the kitchen gardens, and arriving at the frame-ground, I observed various houses, which I will notice in the order I passed through them.

The first is the fernery, 52 feet long, 15 feet wide, and 16 feet high; the Ferns are interspersed with a few stove plants, such as Marantas, fine-foliaged Begonias, Aspidistra elatior fol. vittatis. &c. On the left-hand side of the house is a raised rockery, and the fairy Maiden-hair and other Ferns growing among the stones look very attractive. At the farthest end of the house is a fine specimen of Cyanophyllum magnificum, with luxuriant foliage of this season's growth. Up the pillars, and suspended from the roof with graceful ease, are plants of Passiflora alata, and Thunbergia Harrisii. The next house is 39 feet long by 10 wide, in two compartments. The first was for early Cucumbers; the plants were just coming into bearing, and and looked very healthy. This house promised to be very useful for a good winter supply.

In close proximity is a late vinery. The varieties of Grapes cultivated include White Tokay, Lady Downe's, West's St. Peter's, and Black Morocco. The fruit was all gathered, and underneath the Vines was a miscellaneous collection of plants.

Behind the vinery, with a north aspect, is a house in which are wintered large Aloes and Orange trees, which are interspersed on the terraces and in the flower garden during the summer months. We now enter a span-roofed stove, 40 feet long by 10 wide. Here were many things that attracted my attention, but the visit being hurried, I can only mention a few of the most conspicuous plants that deserve a place in every collection.

Among the most beautiful plants with fine foliage were examples of Alocasia metallica and A. Lowii, with their lustrous, bronzy, shield-like appearance; A. macrorhiza variegata; Gesnera chromatella and G. refulgens, with their curious markings and velvety foliage, admirably adapted for dinner-table decoration—the light playing on the brilliant crimson hairs, with which the latter is well studded, makes it an object of great attraction; Croton angustifolium, pictum, and variegatum; Dracæna Cooperi and ferrea; Gymnogramma peruviana; also a few Orchids, Oncidium flexuosum in bloom being very pretty. In cold frames there were useful collections of robust Cinerarias, herbaceous Calceolarias, and a lot of nice Cyclamens just expanding their charming blossoms.

I then left the frame-ground, and entered the kitchen garden, where neatness and good order markedly predominated. Near to the edges of the kitchen-garden walks are nice symmetrically trained pyramidal Pears. Across the centre of the kitchen garden, ranging east and west, is an arched trellis of iron wire. To this trellis are trained Pear trees, which in summer must make this a very pleasant promenade. In the different quarters were good supplies of winter vegetables, and beds of Celery with three or four rows in a bed.

On the south wall is a range of glass upwards of 200 feet long, divided into six compartments. Beginning at the west end of the range, the first division is an early Peach-house, started a few days before my visit (November 21st). It is 60 feet long, 18 feet wide, 15 feet high at the back, and 4 feet high in the front; rather a large house to start so early. It is furnished with a neat, narrow, slate path 2 feet wide, and the trees are trained, one row against the back wall, and another row to an arched trellis in front. They were in excellent condition, and promised well for a large supply of fruit. I have seen a Peach-house on the same principle at Thorneycroft Hall, in Cheshire, with the front trellis in the form of an arch; it economises space, and admits a greater amount of light to the lower part of the trees on the back wall.

The next house is a vinery 27 feet by 16, exclusively planted with Black Hamburghs. Going out of the vinery we come into the conservatory, which is nearly the centre of the range, and opens into the central walk of the kitchen garden.

Several large greenhouse plants are turned out into the border, and so luxuriant are they, that their heads nearly protrude through the roof. A large Habrothamnus elegans would soon be smothered with hundreds of racemes of crimson flowers. Brugmansia Knightii had just done blooming. I often wonder why we do not more frequently meet with this gorgeous autumn-blooming useful species in general collections of greenhouse plants.

Beyond the conservatory is another vinery, that had been recently planted with a mixed collection of Vines. It is 31 feet long by 16 feet wide. Stepping out of this house we enter another Peach-house, 27 feet by 18, which is started about the early part of January. The last house in the range is a greenhouse 32 feet by 18, with plants in bloom brought from the other houses, and even at the time of my visit, when flowers were scarce, it was a glorious mass of floral beauty. I observed as the most conspicuous in bloom, dwarf examples, about 8 inches high, of Poinsettia pulcherrima, very effective, and one of the most useful plants at this season, either for the decoration of the stove, or for conservatory and greenhouse embellishment. There were also in flower Chrysanthemums, Epiphyllums, Fuchsias, and Primulas, with a sprinkling of fine-foliaged plants.

In the pleasure grounds, the first attractive objects were two very large herbaceous borders on each side of the walk, more than 200 feet in length, planted with choice Phloxes, Pentstemons, Antirrhinums, &c., and near to the edge of the beds were rows of Snowdrops and Dog's-tooth Violets. These beds are screened from the main walks by large evergreens and other trees of varied foliage. Passing on through a serpentine walk, and across to the carriage drive, I was brought to a most delightful retreat for a hot summer's day. On the left-hand side of the walk are a number of raised flower-beds; on the opposite side a rustic cottage covered with Honeysuckles, Clematises, Roses, and Ivy.

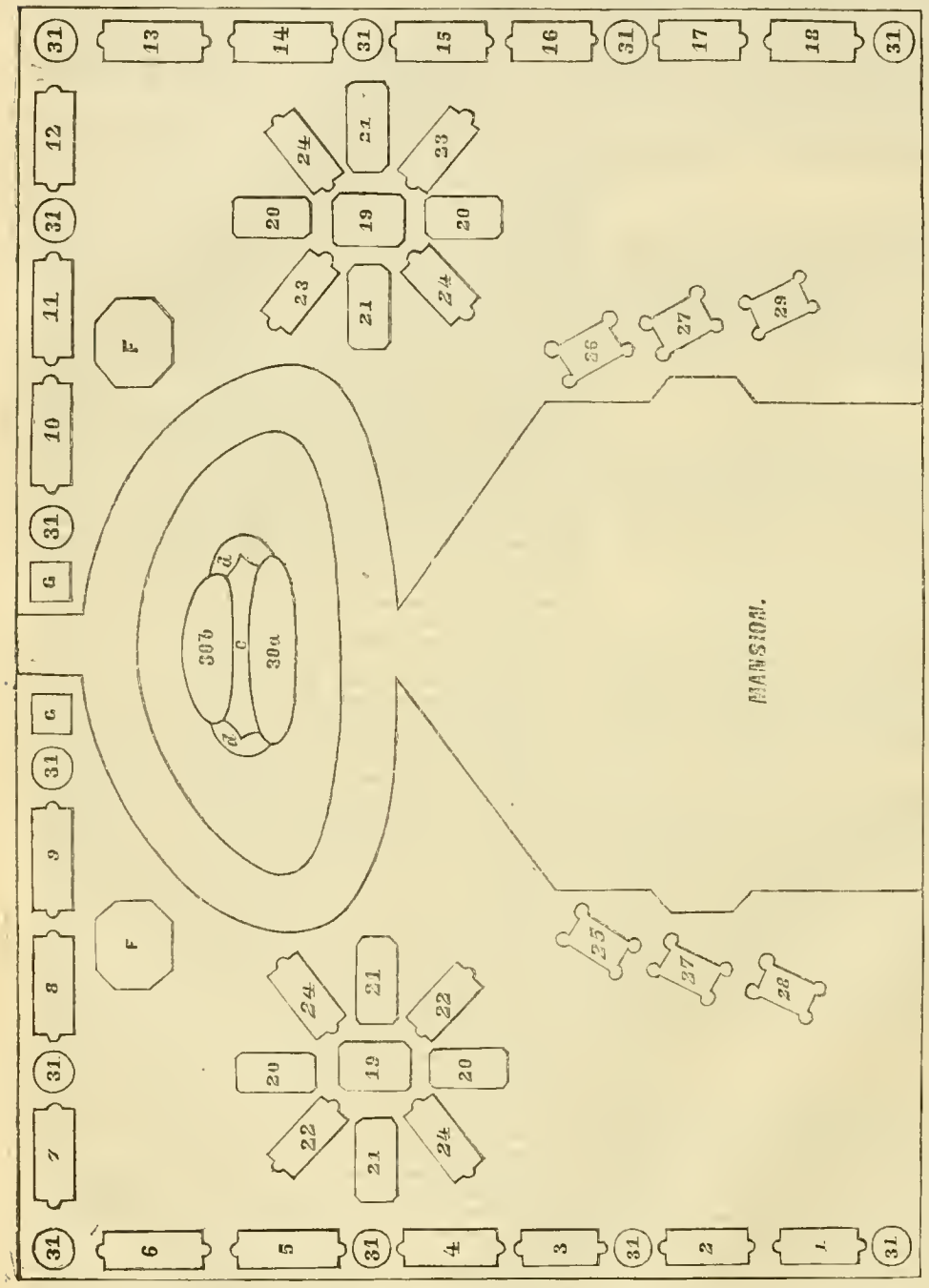
Through an Ivy arcade near to this spot, in a secluded little dell, is the hardy fernery and rockery. Among the Ferns were Lastrea Filix-mas cristata, Osmunda regalis, Polypodium vulgare, Polypodium dryopteris, and many others, natives of the district.

From thence I passed on by the Rose garden. All the trees are named, and most of the popular varieties may be found amongst them. As I passed along this walk my attention was arrested by immense clumps of Rhododendrons 12 or 14 feet high. Better examples of this noble flower it would be difficult to find. It is scarcely possible to conceive their beauty in the months of May and June.

Ascending a flight of steps on to the terrace, we came in front of the mansion. The front is to the west, and the terrace

extends to the north and south sides. It is bounded on each side by an ornamental balustrading, and the views from this terrace are very extensive and varied. The park falls with a gradual descent to the lake. Beyond the lake is the North Staffordshire Railway. The railway is skirted by the Mersey canal, and beyond that, through the valley, the river Trent winds along. In the distance may be seen the snug little hamlet of Trentwell, and the large wood at Trentham; while to the right on a bright day are distinctly seen the towns of Stoke-on-Trent, Burslem, and Tunstall.

The accompanying is a plan of the flower garden. The beds are surrounded by a beautifully dressed stone edging about 3 inches high, within which the beds are raised above the grass. The beds, *a a*, are raised about 2 feet, and encircled



SOUTH SIDE—WALK 104 FEET LONG, 10½ FEET WIDE.

SUMMER PLANTING.

1, Pelargonium Stella. 2, Calceolaria amplexicaulis. 3, Verbena Purple King. 4, Pelargonium Flower of the Day. 5, Verbena Ariosto Improved. 6, Pelargonium Golden Chain. 7, Lobelia speciosa. 8, Verbena Mrs. F. G. Culey. 9, Pelargonium Rubens. 10, Pelargonium Cerise Unique. 11, Cineraria maritima. 12, Senecio elegans. 13, Pelargonium, Ivy-leaf White. 14, Verbena Foxhunter. 15, Verbena Paxtoni. 16, Verbena Lady Cotton Shepherd. 17, Tropæolum, double. 18, Asters, Dwarf Chrysanthemum-flowered. 19, Centre row of Perilla nankinensis. 2nd row, Calceolaria Aurea floribunda. 3rd row, Lobelia speciosa. 4th row, Cerastium tomentosum, an edging all round. 20, Ageratum. 21, Verbena Mrs. Holford. 22, Pelargonium Trentham Rose. 23, Ditto Tom Thumb. 24, Calceolaria Aurea floribunda. 25, Pelargonium Crimson Ivy-leaf. 26, Verbenas, mixed. 27, German Stocks. 28, German Asters. 29, Pelargoniums, mixed. 30, *a a*, Ditto Gem of Roses. *b b*, Ditto Helen Lindsay. *c c*, Chrysanthemum coronarium album plenum. *d d*, Pelargonium Baron Hugel. 31, Mignonette, Humea elegans in the centre. F F, Fountains. G G, Vases filled with Pelargoniums in summer.

The following is the present arrangement of the beds for spring decoration:—

1 and 18, Crocus, yellow.
2 and 17, Dog's-tooth Violet.
3 and 16, Crocus.
4 and 15, Tulips.
5 and 14, Crocus.
6 and 13, Tulips.
7 and 12, Crocus.
8 and 11, Tulips.
9 and 10, Crocus.
19, Hyacinths.
20, Alyssum saxatile.
21, Tulips, Rex rubrorum.
22 and 23, Myosotis palustris.
24, Pansies.
25 and 26, Pansies.
27, Crocus.
28 and 29, Bellis (Daisy).

with ornamental stonework. Through the kindness of Mr. Myatt, the head gardener, I snbjoin a list of the plants with which the beds were adorned during summer, and also a second list, giving a description of what the beds are now filled with for spring decoration.

In conclusion, all that I saw at Barlaston was very praiseworthy. The extensive grounds were in good keeping; each department gave commendatory evidence for Mr. Myatt and his assistants, from whom I received the utmost courtesy.—QUINTIN READ, *Port Hill Gardens, Burslem.*

NOTES AND GLEANINGS.

Those of our readers who have rooms and conservatories with a north aspect, or which are overshadowed by other buildings, will be aided by the following note of a suggestion by Sir David Brewster:—"If, in a very narrow street or lane, we look out of a window with the eye in the same plane as the outer face of the wall in which the window is placed, we shall see the whole of the sky by which the apartment can be illuminated. If we now withdraw the eye inwards, we shall gradually lose sight of the sky till it wholly disappears, which may take place when the eye is only 6 or 8 inches from its first position. In such a case the apartment is illuminated only by the light reflected from the opposite wall, or the sides of the stones which form the window; because, if the glass of the window is 6 or 8 inches from the wall, as it generally is, not a ray of light can fall upon it. If we now remove our window and substitute another in which all the panes of glass are roughly ground on the outside, and flush with the outer wall, the light from the whole of the visible sky, and from the remotest parts of the opposite wall, will be introduced into the apartment, reflected from the innumerable faces or facets which the rough grinding of the glass has produced. The whole window will appear as if the sky were beyond it, and from every point of this luminous surface light will radiate into all parts of the room."

—— We have received from Messrs. Lucombe, Pince, & Co., of Exeter, a bunch of that admirable Grape, Mrs. Pince's Black Muscat, which was ripe on the Vine *twelve months ago*. We need hardly say it is now in the state of raisins, and these are as fine, fleshy, and delicious as the finest imported Muscatels. We take this opportunity of stating that Mrs. Pince's Black Muscat is one of the most valuable acquisitions in the way of Grapes which has been introduced for many years. Imagine the delicious but miffy old Black Muscat of Alexandria, with a robust constitution, a thick, stout, sturdy, berry-stalk, a tough membranous, though not thick, skin, and with the property of hanging till the sap rises again, and you have Mrs. Pince's Black Muscat.

WORK FOR THE WEEK.

KITCHEN GARDEN.

We have but little to add to former directions in this department. The principal routine of business to be performed at this season is thorough draining, opening, clearing out, and repairing old drains, and making new ones, altering walks and fresh casing them with some good hard materials, the edgings having first been evenly made up. There is nothing in a kitchen garden which has a more neglected, dilapidated appearance than uneven, weedy walks, with gappy, overgrown, or irregular Box or other edgings. The wheeling out of manures on spare borders and quarters, and trenching, must be proceeded with, and all possible speed should be made with these operations in suitable weather. Hoeing and surface-stirring amongst all kinds of progressing crops must be performed in fine days. By this practice the mutilation and destruction occasioned by obnoxious insects and their larvæ are to a great extent prevented. We should never hear of the destruction committed by slugs, snails, wireworms, or other vermin to any considerable extent if such a system were faithfully carried out. Abundant preparations for the coming spring must be made in this department. A stock of garden mats must be procured for covering-purposes, and a mat or two cut up, tied in bunches in two classes, and hung up ready for summer use. Plenty of shreds for wall trees will require cutting, and the old ones should pass through the ordeal of boiling water. Here, too, the preparation of labels for dating and naming crops must proceed, and the seed-drawers should be thoroughly examined, cleaned out, and the old seeds dated and classified, in order that their relative value may be readily known. The new seeds will, of course, want arranging. Above all, a scheme of cropping, based on a judicious rotation, should be laid down forthwith. Broccoli, Celery, Carrots, Endive, Lettuce, Parsley, and other needful articles, should be protected in due time from frost.

FRUIT GARDEN.

Figs against walls will require some protective material placed over them in the midland and northern counties. This, indeed, has been a favourable autumn for performing operations in the fruit department. We hope that all speed has been made. It may be said that the ground has been damp under foot for standing to prune and nail; but surely a dry board to stand on could be obtained. It should always be cleaned and put to dry in the tool-house, so as to be in readiness and comfortable for the feet again by the next day.

FLOWER GARDEN.

The weather is still exceedingly favourable for the execution of alterations or new work, and it will not be the fault of the weather if such work be not finished in good time this season; but we know from experience that it is in many cases easier to commence such operations than to know when or where they will end, and we would merely recommend here that every possible dispatch should be used to complete all such operations as speedily as possible, in order to have the hands at liberty for the regular work, which, save in a few favoured cases, will soon require all the labour that is allowed. If not yet done, the leaves should be cleared up and the shrubbery borders lightly forked over to give them a fresh appearance. Lawns and gravel walks must be frequently rolled, so as to keep them firm and smooth. Those who purpose planting in the spring—for many persons still retain the notion that planting can be done in spring with greater certainty of success than at any other season—should lose no time in preparing the ground by trenching, or whatever may be deemed necessary for the plants. On light sandy soils there will be no particular necessity for making the pits at once; but, however friable the nature of the soil may be, it will be all the better of exposure for a month or two to the action of the weather. Where Rhododendrons are grown in masses and exhibit any indications of having exhausted the soil, a top-dressing of cow-manure, well decomposed, some 3 inches deep, and extending as far as the roots, should be applied at once. This will strengthen the plants for flowering, prevent rapid evaporation in summer, and keep the ground cool and moist, which is essential to the well-being of this handsome tribe of plants.

GREENHOUSE AND CONSERVATORY.

Attend carefully to valuable pot specimens of hardwooded plants, which it may be necessary to winter in the conservatory, for many of these are very impatient of fire heat and a confined atmosphere, and ought, therefore, to be kept as much out of the way of its influence as circumstances permit. Such plants should be placed near the glass, turning them partly round every week so that all their parts may be equally exposed to light; and admit fresh air on every favourable opportunity, but carefully avoid cold cutting winds, which, if allowed to blow through plants just after they have been kept close with fire heat for some time, are sure to disfigure the foliage. Use no more fire heat than may be indispensable, and be careful to counteract its drying effects on the atmosphere, either by means of evaporating-pans or by sprinkling the border, &c., as may be necessary, to prevent anything like a dry, parching state of the atmosphere. Look well to plants in a growing state, such as Leschenaultias, and Pimeleas; remove the bloom as fast as it appears, but those plants of the former which are intended for early blooming must not have their flowers removed after this time. The number of plants brought forward will depend upon the demand, and must be regulated accordingly. Azaleas and Rhododendrons for forcing, still out of doors, must have some protection should severe weather occur, or remove them to any spare house till wanted. Narcissus, Hyacinths, &c., should be protected by a frame; as they now begin to grow, remove the plunging material down to the surface of the pots to prevent them rooting upwards. Mignonette and Neapolitan Violets will require abundance of light and air to keep them from damping. As a change from the present to severe weather may come on suddenly, be provided with ample means for covering pits and frames should it occur. As, with the exception of forced plants, most of the others are now in an inactive state, the temperature of plant-houses should fall to its minimum point, consistent with the safety of the various inmates. Nothing can well be worse for the development of a healthy, vigorous growth in plants than subjecting them to a high temperature at the present season of the year when light, so important to the healthy action of vegetable life, cannot accompany it.

STOVE.

Here all is still and quiet. Keep a moderate heat of from 50° to 60°, and give plenty of air. The Ixoras should be elevated near the glass to set their bloom, and have plenty of air at all times; keep them comparatively dry. Stephanotis, Allamandas, &c., may be potted and trained preparatory to starting, and the staking of all specimen plants must be proceeded with as fast as possible.

PITS AND FRAMES.

Plants of a succulent character will require much attention during damp, rainy weather. Geraniums, Calceolarias, &c., are very liable to become mouldy. Remove all leaves so affected as soon as they are discovered, or the evil will spread. —W. KEANE.

DOINGS OF THE LAST WEEK.

THE general work has been very much the same as in previous weeks. Some time was taken up in preparing, by ornamenting for Christmas festivities, which we hope will never become so old-fashioned as to lose their force and influence upon all ranks and ages of the community. Keenly enjoyed as Christmas gatherings are by the young, we question very much if they are not even more beneficial to those getting up in years, as in their case especially it is well that the heart should be kept young even whilst the body is feeling the effects of age.

In ornamenting a room with evergreens, there is generally a great objection to anything in the shape of a nail in the wall; but much may be done by having poles covered, a flat piece of board fastened to the top, and that covered with layers of cloth to go against the wall, and then these poles may be connected together with strings of leaves; and the running line obtained, all sorts of festoons and wreaths may be added at pleasure. For this purpose the twigs of Laurel, Laurustinus, Holly, &c., should not be too large, so that they may be nicely tied to the cord; and the more neatly this is done, the more nice and symmetrical will the wreaths and festoons appear. A good variety may be given even by making the most of the strings of common Laurel, and having prominent parts done with Laurustinus in bloom, and different colours of Holly, with or without flowers, natural or artificial.

Christmas Trees.—These are events chiefly for the young, and beautiful they look when well done. We mention them here because we find there is a great difficulty with some of our friends—first, in obtaining a symmetrical tree, and, secondly, in making it stand upright when it is of a large size, and more especially if much weight is hung upon it. This must be the only excuse for adverting to such a simple matter here; but the simplest matters are often the most puzzling to those who have never attended to them before. Last year we heard of more than one Christmas tree that came to grief, falling over on its broadside just when the children were clapping their hands in approbation at the brilliant light from the many coloured wax candles, and the glitter of many a beautiful toy.

Of all trees the Spruce is the best for a Christmas tree, as the dark foliage contrasts well with the brilliancy when the candles are lighted. The tree may be of any size; from 10 to 13 or more feet would be a good height from the floor for a large party and a large room. We do not trouble ourselves with the roots of the tree, but cut it over at the desired height. The more regular the layers of branches are the better, and if the foliage on them should be rather thick, a good deal may be cut away from the lower side of the branches, so that the light may appear to more advantage and the different things suspended be better seen. This will also secure the candles fixed on the different tiers burning without coming in contact with any of the twigs above them. The long point of a young Spruce tree also forms a natural place, as it were, for fastening the principal flag to, and less flags may be fastened to stand out obliquely from the base of this terminal shoot. The tree will always look best when, from the wide branches at the base to the terminal shoot, a somewhat equal but slightly irregular cone is formed of the different layers of branches. Were you to search a whole day in a wood for a fine-balanced tree, you would not find one in which there would not be some breaks in the conical outline, and hence, where a very fine regular effect is required, not only will the branches require thinning in some places, but it would be well to have a number of branches in reserve from the largest to the smallest size. By means of a large gimlet for the smaller branches, and an auger for the larger ones, we can make each layer or ring of branches regular all round—that is, moderately so, so as not to interfere with the natural appearance of the tree, by securely fastening a branch in the bole where wanted, and of the requisite length. By this means the poorest and most unsymmetrical tree may be rendered very symmetrical. This is all that would be required where the articles to be suspended were light; but when they are heavy and useful, as for a women's club, all the main branches could be kept firmly in their places, and hold a good weight without being depressed out of shape, by a fine copper wire being fastened 2 feet or 30 inches from the top of the tree, taken round each main branch from top to bottom, and then fastened by a nail to the tub, in which the tree was placed. From six to a dozen of such strings would keep all the main branches in their places, and as the higher tier could not be unduly depressed too close to the branches beneath, the candles might burn with little or no attendance. We recommend small brass wire instead of small string, because hardly to be seen, and also because string would be liable to be burned, and then the weight might unduly depress the branch. For light toys no such bracing would be required.

Some of this work may be done before the tree is fixed, but the most particular should be done afterwards. As a pot for the tree, nothing answers better than a moderate-sized tub or an old beer-barrel without one end. A four-gallon barrel will do for a small cut-over tree; a nine-gallon barrel will hold a large one, on which almost any likely weight may be suspended. In placing, the first proceeding is to saw the bottom of the bole of the tree across horizontally. Then we measure the bottom of the vessel, say a barrel, and if it is circular we take a board cut round, and half an inch less in diameter than the inside diameter of the vessel. This is nailed at the centre securely to the centre of the bole of the tree. The tree is then lifted, and the board and the base of the tree are placed in the barrel, the board resting on the bottom of the barrel. This is a better holding than even a lot of roots would be. On the top of this board the barrel or tub is filled to the top with bricks or stones and sand well jammed in, and no common weight will cause tree or tub to swerve. The top and sides of the vessel may be concealed with Ivy, &c. A Spruce tree has a good weight of itself; and when much weight has to be put on it, some such precautions are necessary if the tree is to maintain a natural position, and the floor of the room is to be encumbered by no bracings. No doubt there are other modes of making and then securing fine symmetrical Christmas trees; and as we learn that in some parts of the country these trees will be in request until at least the 12th of January, if any extra hints can be given before that time we are sure that many would be obliged. We have merely treated of the tree in its skeleton appearance, or in its merely gardening point of view. The furnishing of the tree is a matter for the ladies, who can do it with a grace that few of us can hope to equal, though we can appreciate it when done.

KITCHEN GARDEN.

Mushrooms.—In our out-door open shed the Mushrooms were like broad blue Scotch bonnets; and we mention the fact for the purpose of disclosing a great secret. As the bed had become a little dry from the covering, they were watered all over the bed from the spout of a pot, with water in which dried cowdung had been soaked. Now, for such watering of Mushroom-beds we rather disapprove of manure water from any dung that is in a green state; but when previously dried and then soaked, we have great faith, so far as large Mushrooms for broiling are concerned, and we would prefer dried sheep and dried deer-dung to cowdung. In all such watering we never like young Mushrooms to be touched with the water, it is apt to make them feathery, and therefore we prefer the spout of the pot to the rose; and if the bed should be at all dry whilst the surface is moist enough, we prefer making holes with a stick instead of soaking the surface soil.

FRUIT AND ORNAMENTAL DEPARTMENT.

Much the same as last week. Managed to plant out in well-prepared rich borders, lots of the single and double blue Violets, which had been pricked out thickly in a temporary bed. A pressure of other work prevented us striking cuttings, or dividing the plants of Neapolitan Violets, growing, and then lifting them into a frame or pit in autumn, which along with never allowing a runner to appear, is the best plan for managing such desirable plants. Some plants in a pit were put in late last season, and being rather small, we thought they might do with top-dressing for another year; but although they will do fairly they will not be so good as if they had been treated as stated above.—R. F.

TRADE CATALOGUE RECEIVED.

James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, S.W.—*Catalogue of Garden and Flower Seeds, &c.*—*List of Gladiolus.*

COVENT GARDEN MARKET.—December 29.

A return to dulness in the trade generally is the characteristic now, and heavy consignments reach us both English and foreign, there being a large supply of rough home-grown Apples, which hardly command prices to pay commission. Pears are limited to Winter Nelis, Glou Morceau, and Passe Colmar. Some excellent Pines have come from the Azores, quite equalling those we have had occasion to remark upon in former years. The best Potatoes have slightly advanced in price.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ....½ sieve	2	0	to 3	0	Melons.... each	2	0	to 4	0
Apricots .... doz.	0	0	0	0	Nectarines .... doz.	0	0	0	0
Cherries .... lb.	0	0	0	0	Oranges 100	5	0	10	0
Chestnuts.... bush.	10	0	18	0	Peaches.... doz.	0	0	0	0
Currants.... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	3	0	6	0
Black .... do.	0	0	0	0	kitchen.... doz.	2	0	4	0
Figs .... doz.	0	0	0	0	Pine Applea .... lb.	3	0	6	0
Filberts....lb.	0	0	0	0	Plums .... ½ sieve	0	0	0	0
Cobs.... lb.	0	9	1	0	Quinces .... doz.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Raspberries....lb.	0	0	0	0
Grapes, Hothouse..lb.	4	0	8	0	Strawberries .... lb.	0	0	0	0
Lemons 100	5	0	10	0	Walnuts.... bush.	10	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes .... each	0	0	to 0	0	Leeks .... bunch	0	3	to 0	0
Asparagus .... bundle	0	0	0	0	Lettuce....per score	1	0	1	6
Beans, Broad.. bushel	0	0	0	0	Mushrooms .... pottle	1	0	2	0
ScarletRun.½ sieve	0	0	0	0	Mustd.& Cress, punnet	0	2	0	0
Beet, Red.... doz.	2	0	3	0	Onions.... per bushel	2	0	3	6
Broccoli .... bundle	1	0	1	6	Parsley..doz. bunches	2	0	3	0
Brus. Sprouts ½ sieve	2	0	3	0	Parsnips .... doz.	0	9	1	3
Cabbage .... doz.	1	0	2	0	Peas.... per quart	0	0	0	0
Capsicums....100	0	0	0	0	Potatoes .... bushel	2	6	4	6
Carrots.... bunch	0	4	0	6	Kidney .... do.	3	0	4	0
Cauliflower .... doz.	2	0	6	0	Radishes doz. bunches	0	6	1	0
Celery .... bundle	1	0	2	0	Rhubarb .... bundle	0	0	0	0
Cucumbers.... each	0	9.	1	0	Savoys .... doz.	1	0	2	0
pickling .... doz.	0	0	0	0	Sea-kale .... basket	3	0	4	0
Endive .... doz.	2	0	0	0	Shallots .... lb.	0	8	0	6
Fennel .... bunch	0	3	0	0	Spinach .... bushel	2	0	3	0
Garlic .... lb.	1	0	0	0	Tomatoes.... per doz.	0	0	0	0
Herbs .... bunch	0	3	0	0	Turnips .... bunch	0	4	0	0
Horseradish .. bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

Hyacinths in a Room (*C. M. W.*).—The beginning of October is the best time to pot Hyacinths and to place them in glasses. You may pot the small bulbs now in 4½-inch pots, and large ones in six-inch pots. Drain the pots well, and use a compost of turfy loam two-thirds, and well-rotted manure one-third, with a free admixture of sharp sand. Three parts fill the pots with soil, place on the surface a little sand, and on this set the bulb in the centre of the pot; then fill in soil around the bulb, so as to be level with the crown, leaving the least possible part of the crown uncovered. Give a gentle watering, and place the pots in a dark cupboard for a fortnight, then set them on a ledge or shelf in a window having a southern aspect; keep the soil moist by watering, never allowing it to become either too wet or too dry, and turn the pots round frequently so as to have the spike and foliage erect. If you grow Hyacinths in glasses, fill these to within an inch of the bulb with soft water, and place them in a dark cupboard until the bulbs begin to push and have made considerable progress. A piece of charcoal about the size of a small walnut may be put into the water, and it will tend to keep the water sweet. Do not change the latter so long as it remains sweet, and when it is changed use soft water which has been in the house some hours. Keep the glass replenished with water as this evaporates.

Azaleas Forcing (*A Youngster*).—Your house with a day temperature of 60°, and a night one of 50°, is suitable for bringing on Azaleas. In such a temperature, with a fair amount of ventilation and a moist atmosphere they will flower in six or eight weeks, dependant, of course, on the state of the buds. Some Azaleas lose many of their leaves at this season; many shed them through their having had the soil much too dry at some time.

Azalea Culture (*H. H.*).—The small-leaved kinds you name do not require treatment different from that of Azaleas generally. It is seldom we find it necessary to thin out the shoots of Azaleas, for weakness is favourable to flowering rather than otherwise, and gross shoots frequently do not flower. We fear you do not give the plants liberal treatment, nor sufficient moisture, as they are so liable to thrips.

Primula sinensis Flowers (*D., Newark*).—The pips are very fine, but no judgment could be formed of their merits, for they were bruised by the post-office stamping. Flowers must be sent in a box and in damp moss.

Covering Peach Trees (*Agnes*).—It is not necessary at this season to protect Peach trees. When the buds exhibit indications of swelling the covering may be put on, and remain on day and night in order to retard the blossoms. After the flowers open the covering should only be used at night, except on frosty or foggy days. Whenever the days are mild the covering should be removed during the day. Your proposed mode of protection is very good, only the covering must not remain down by day after the blossoms expand, when the weather is fine and mild. The mesh of the nets should not exceed a quarter of an inch. Woollen nets are best, but cotton will do if the meshes are not too large. You may double or treble the netting.

Cucumber Fruit not Setting (*James Pim*).—The fruit fall when they should swell because you do not fertilise the flowers, which is necessary with some kinds at this season. Other causes are a deficiency of bottom heat or a too high night temperature. With no particulars we are unable to advise further.

Vacant Ground (*T. M.*).—Fork over your light sandy soil now, and pick out the roots of weeds, but do not lay on manure. Your ton of scrapings from the footpaths, mixed with leaves, weeds, &c., and to which you have added three pecks of lime, will be further improved by the same quantity of salt the next time you turn it over. Put this compost on the ground in the spring when digging, previously to planting, sowing, &c. The "Garden Manual" will suit you. If you enclose twenty postage stamps with your direction you can have it free by post from our office.

Cotton Seed of all varieties may be obtained from the Secretary of the Cotton Supply Association, Newall's Buildings, Manchester.

In-door Plant Case (*Lover of the Country*).—Either of those you mention would do for forcing on a small scale.

Everlasting Flowers (*E. M. B.*).—The varieties of each species of what are termed "Everlastings," are so numerous that it is impossible to identify them—in fact, they are unnamed. The two heads you enclosed, for instance, are each Helichrysum bracteatum, and in ordering seeds of them, all that you could say to distinguish them would be to describe one as the white, and the other the crimson variety. The large yellow Everlasting is the yellow variety of H. bracteatum. The small yellow, if you mean that used in constructing "Immortelles," is Gnaphalium arenarium.

Protecting Pear Blossom (*A. Q.*).—In most cases it will be sufficient if a piece of thin calico or tiffany be thrown over each bush or pyramid, there being at each corner a piece of string which can be tied to the tree so as to prevent the covering being blown off by the wind. Where convenient a stout stake may be inserted by the trunk, and extending 1 foot higher than it, and then other stakes should be placed against this upright, outside the branches, one end resting on the ground and the other secured with string to the upright. These stakes, which may be slaters' laths, 1½ by ½ inch, should be placed 2 feet apart in a circle round the tree. The covering being fastened with string at a distance of 1 foot from the ground, will be secure against wind, and borne at such a distance from the blossom as not to injure it.

Primula Seed Sowing (*Anxious to Know*).—To have good Primulas, seed from good flowers must be sown, and to secure this the purchaser must give rather a high price. Good Primula seed is dear. Your time of sowing is suitable for an autumn and winter bloom. Our plan is this: the seed is sown in the first week in March in pans one-third filled with broken pots, an inch of moss, cocoa-nut fibre, or the siftings of the compost being placed thereon; and then the pans are filled to the rim with turfy loam, sandy peat, leaf mould, and silver sand in equal parts, passed through a half-inch seive. The surface is made smooth, the seeds scattered thinly over it, and just covered with the same compost. A gentle watering is then given, and the pan is placed in gentle heat, such as that of a Cucumber-frame. Care is taken to keep the soil moist, but by no means wet, and when the plants appear the pan is brought near the glass, so that they may have abundance of air and all the light possible. Here they remain until they are of sufficient size to pot off; they are gradually hardened off and removed to a vinery or other house, and in June or early in July transferred to a cold frame, where they are shifted as occasion may require.

Swollen Black Currant Tree Buds (*W. J.*).—We know of no insect that deposits its eggs in the buds of the Black Currant "causing them to swell to an enormous size." If you send us shoots having on them some swollen buds we will endeavour to determine the name of the insect.

Number of Men Needful (*R. F.*)—A general rule used to be a man for each acre; but flower gardens and pleasure grounds need much more labour than kitchen gardens. Soil, proportion of each department, and other considerations, have an influence also.

Vinery (*A Scot*.—We do not think you would do any good with a vinery on such a north-east aspect without heating the house, and even then the situation would be unsuitable. We would prefer devoting the wall to Plums, Cherries, and Pears.

Vine Roots in Wet Subsoil (*B. T.*).—The best thing you can do, having drained the border, is to concrete the bottom, place 6 or 10 inches of rubble over it, and having carefully taken up the roots of the Vines, to wrap the roots in mats covered with straw, make a fresh border, and replant carefully about 6 inches from the surface. Add as much hot litter on the surface as will give a temperature of from 65° to 80° in the earth, and let the Vines break naturally.

Tubular Boiler (*Tubular*) —We do not remember the account of the boiler your refer to in 1862. We do our utmost to oblige our readers, but we cannot afford time to seek for references for them; they must do that. We place less value than some people on having pipes with water under the fire; we believe that good bars are in every way better. Your boiler ought to heat 1,200 feet; but a No. 4 does not give us a definite idea, as different makers differ in size, and the size would have enabled us to have judged better. If well set, &c., do you keep the heat from going up the chimney by a damper?

Names of Fruits (*Richard Nicholson*).—*Apples:* 1, Warwickshire Pippin; 2, Crimson Queening; 4, Fearn's Pippin; 5, Alfriston; 6, Hollandbury. *Pear:* 1, Susette de Bavay.

Names of Plants (*A Novice*).—1, Adiantum, insufficient to determine the species; 2, Onychium japonicum; 3, Pteris longifolia; 4, Gymnogramma calomelanos; 5, Aspidium molle (?) (*Fred*).—Oporanthus luteus. (*Amateur*).—We cannot satisfactorily name the scraps you send. 1 is

Specularia speculum; 2, probably a leaf of Albizzia lophantha; 3, Centaurea ragusina; and 4 may be Cineraria maritima. (*J. Bryan*).—1, Rivina levis; 2, Euphorbia jacquiniæflora; 3, Justicia speciosa; 4, Habrothamnus fasciculatus. (*An Old Subscriber*).—Garrya elliptica. (*Frederick Webber*).—1, Pellæa geraniifolia; 2, Pteris semipinnata; 3, Phlebodium aureum; 4, Platycerium alcicorne (?); 5, Davallia canariensis.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Eight Days ending December 29th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Sat. .. 22	30.340	30.301	42	32	43	43	S.W.	.01	Foggy throughout; slight drizzle at night.
Sun... 23	30.333	30.313	45	31	44	43	W.	.00	Hazy; overcast; fine throughout.
Mon... 24	30.244	30.222	43	28	45	43	S.W.	.01	Hazy, and mild for the season; thick uniform haze; slight frost.
Tues. . 25	30.192	30.073	43	34	45	43½	S.W.	.00	Very fine throughout; overcast at night.
Wed. . 26	29.988	29.912	53	37	46	44	S.	.10	Densely overcast; very fine throughout; rain at night.
Thurs. 27	29.831	29.742	54	40	46	44	W.	.00	Boisterous; cloudy; starlight at night without frost.
Fri. .. 28	29.950	29.865	55	40	47	45	W.	.00	Overcast; fine; warm for the season.
Sat. .. 29	29.788	29.404	51	30	47	45½	S.W.	.04	Fine; very fine; boisterous, with rain at night.
Mean	30.083	29.979	48.25	34.00	45.37	43.87	..	0.16	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE PAST AND THE FUTURE.

In this first Number of "our Journal" appearing in 1867, we, as is our custom, now review the past and salute the new year. We hope we are, as we should be, very grateful; we have been spared to address our numerous friends again. It is now many years since we first did so, and although the "insatiate archer" makes his annual gaps, yet we are thankful that the original phalanx remains a numerous and serried one.

Many will remember the past year with gloomy feelings. It has been to them, we fear we may say to most, a period of gloom, loss, and trial. We are indeed thankful we have not to do with those themes, nor should we advert to them were it not that the destruction of cattle owing to the rinderpest, and the consequent rise in the price of meat, have forced the public of all classes of society to look at poultry as a valuable auxiliary in providing food for a nation. The wonderful increase in our importations of eggs and every article of food produced in the farmyard has awakened the attention, not only of those who seem to consider it their province to provide the food of millions, but of the political economists who assess the loss that is suffered by the community when money leaves the country. We have no doubt the exceptional state of the food market during the past year has awakened the attention of those men whose energies are never directed to a subject without producing a visible result. There can be no doubt that the question is capable of great development, and that food, both meat and eggs, may be provided in much larger quantities than at present, without any increase of expense.

The beginning of 1866 was notorious for the number of companies that were formed, and of speculations that were entered into. Poultry was represented by two companies; one has been some time defunct; the other is, we believe, the "sick man" of the poultry world—no other result could be expected. None but a very theorist could have dreamed that poultry could be profitably bred on five acres of land in sufficient quantities to enable the Company (limited) to sell it by weight at per pound in the metropolis.

While on the subject of production, we must mention the fact of several hatching machines being brought before the public. We anticipate much good from them. They will never supersede hens, nor would it be a gain if they did, but they will undoubtedly increase the poultry stock.

The Poultry Club still exists; some of its originators and old office-holders are retiring, and a few new members are joining. The account furnished of their Rochdale Show was discouraging, and the "Standard of Excellence" has not become the text book of amateurs. We wish them every success in all that tends to the good of the pursuit.

Birmingham, the great mother of shows, and the originator of most of our schemes as connected with exhibitions, has again been in the van of innovation, and new ideas were adopted with success at her last Show. It is no uncommon thing in larger undertakings than poultry shows for classes to clash, and for one to ignore the other. Directors and managers can speak feelingly of conflicting interests, and exhibitors, spectators, and purchasers form three of them. The first class is often threatening to withdraw from exhibiting unless certain things which they desire are complied with. The third is supplied from the second, and they declare justly that they supply the sinews of war. Birmingham has tried to please all, and has partially succeeded. Purchasers wished to be able to buy a hen of their own selection, and one that might be bred from without having brother and sister in the yard. The new classes have proved a success, having nearly doubled the sales; while purchasers have been suited, the sales of the birds have proved a welcome addition to the profits of the prizetakers. Manchester has again been the scene of a large and successful Show. Mr. Jennison deserves well at the hand of amateurs for the care and punctuality that attend all his dealings.

The South is giving signs of vitality, and shows are springing up. The Royal Agricultural Society of England will again have poultry at Bury St. Edmunds, where the show will be held this year.

Dorkings have held their own, but have made no progress in weight. There must be a limit, and they have, perhaps, attained it. Spanish remain stationary. Cochins are decidedly improving in quality and popularity. Brahma Pootras are realising our predictions, and not only form a very large class, but an offshoot, the Light Brahmas, is treading on the heels of the Dark birds. Polands increase in numbers and quality. Game are always admirable, but they have surpassed themselves in the past year. Hamburghs are numerous and good, but we doubt whether the best pens are as meritorious as they were some years ago. Game Bantams are deservedly favourites with the public, and their classes are not only numerous but produce exquisite specimens; Blacks and Whites hold their own, but Sebrights fall off in numbers. The Rouen Ducks have at last beaten the Aylesburys in weight, and have also formed more numerous classes. Geese are still improving. We should be afraid after what we have seen to fix a limit to the weight they may be made to attain. The same may be said of Turkeys.

We feel somewhat as we should imagine a Judge feels when at a maiden assize he is presented with a pair of white kid gloves. We have no fault to find, no grievance to dilate upon, no complaint to make. While this gives us great pleasure in our task, of necessity it curtails our paper. Our profession of faith is an old one. We have to tell the truth so far as lies in our power. The old saying will recur to many, "*On ne se fâche que de la vérité.*" If we have caused pain by any remark, the fact that we did not intend to do so will make the *amende* easy—we apologise for it. Our career has been smooth and easy through a troublous time, we thank our subscribers for it.

Our support years ago, and our great comfort and happiness now, have been, that among those who form our subscribers we have none but friends. Our success has proved that we were not mistaken in the line we chalked out when we started; and now, when we address all, our subscribers, contributors, and friends—when we close a year of unusual trial to those who are still numbered among the working classes—we feel strong in our motives and practice, and hope and believe there will be a hearty response from all when, forgetting the past, except so far as it may have taught useful lessons, we heartily wish to all

A Happy New Year.

Walsall Poultry Show.—As an additional attraction to this Show, sweepstakes are being arranged for the following

varieties of poultry:—Dorking, Spanish, Buff and White Cochins, and the two classes of adult Game. Subscription one guinea each, to be divided among subscribers only into two prizes—three-fifths for the first, two-fifths for the second. The Hon. Secretary, Mr. J. Bayliss, will receive subscriptions, which will close on the same date as the entries—viz., January 5th. Several gentlemen have already given in their names as subscribers to the Buff Cochin and Game classes.

THE POULTRY CLUB.

Absence from home prevented me last week from correcting one or two errors in your report of the Club meeting at Birmingham. The first I observe is with reference to the motion proposed by me with regard to the detention of the Club funds by the Hon. Treasurer without explanation. You say, "An explanation was offered by Mr. Zurhorst exculpating Mr. Tudman," when in point of fact the very reverse was the case. The facts are as follows: Mr. Tudman, having had due notice of the resolution calling on him to explain why he had not paid over the money voted and ordered by the Stewards on account of the Rochdale prize list, came to the meeting, anticipated the call for an explanation by giving in his balance-sheet, resigning, and leaving the room before the motion could be brought on, without remark of any kind, except that some of the money received on account of the "Standard of Excellence" had not passed through his hands. Mr. Tegetmeier explained that he had offered it to Mr. Tudman, who declined to receive it, and that as a last resource he had remitted it to the Hon. Secretary.

As Mr. Tudman had apparently run away to avoid explanation, I deemed it necessary to offer some remarks, before withdrawing the motion, as to why I brought it forward. In doing so I dealt as lightly as possible with the absent; but I was compelled to show how far, in the gratification of private feeling, Mr. Tudman had jeopardised the credit of the Club, and I stated circumstantially my reasons for calling on Mr. Tudman for a public explanation. As he did not choose, though filling a most responsible office, to afford this, I was compelled to come to the conclusion that his conduct was unjustifiable to the honourable body for which he was trustee; and so far from exculpating him I left the facts in the hands of the meeting, expressing my own opinion of the undignified and selfish course he had pursued.

The motions respecting the judges were consolidated; and so close was the division of opinion, that the first voting resulted in a tie. The second voting had the same result, an additional vote having been obtained on each side, and the Chairman finally gave the casting vote.

There was no question submitted as to the disposing of the remaining copies of the "Standard," for the Club has no doubt on this subject, as there is still a fair demand, though not as great as at first.—F. W. Zurhorst, *Hon. Sec. Poultry Club, Donnybrook.*

Absence has prevented me replying to "A Member," whose letter appears in your Journal of the 18th ult.; but I am, no doubt, all in good time, and I am sure the spirit of fair play which always animates your Journal will afford me space. The communication in question is a tissue of misstatements from beginning to end. But to begin. He says, 'a member high in office informed him that the 'Standard' had been cast aside as useless long since," &c. Now this is so utterly at variance with the facts, that I am inclined to think "A Member" must have dreamed it (I should not venture to think it was a concoction), as the following figures are well known to all members, including those "high in office," who have taken the trouble to read the reports or attend the meetings. The "Standard" cost some £27 to publish and bind a five-hundred edition. The whole of the members then on the books received a free copy. The numbers sold have been sufficient to pay the whole expenses and leave a balance of from £8 to £10 applicable to other purposes, together with some 150 copies available for sale or presentation free to new members on application to the Honorary Secretary. At our next balance our publishers will have a goodly balance of cash to hand us, and I am this day sending off copies to individuals outside the Club who have applied for them. So much for assertion No. I. Now the next.

The numerous commendations of the "Standard of Excellence" that have appeared in the columns of the press, and its large sale, render any further comments on its merits unnecessary.

With reference to the Club Judges not judging book in hand, "A Member" again displays his ignorance of facts. I will simply quote a portion of the minutes of a meeting held the 1st of October, 1864, Mr. Kelleway in the chair. Mr. Beldon said that some misapprehension existed as to the rules for judging, "no judge could be expected to go about book in hand;" and it was then unanimously resolved that to prevent misapprehension the title of the forthcoming book should be changed from "Rules for Judging" to "The Standard of Excellence." The Club prospectus published in January, 1865, stated that it "was for the guidance of exhibitors," and to "obtain as far as possible uniformity of judging." I presume our well-informed "Member" (?) will now understand why the Judges at Rochdale did not go about book in hand.

As to the discussion and division on the additions to the Judges, I suppose "A Member" will allow others to entertain an opinion. It is a pity he did not, as he says he attended the meeting, assert his, instead of confining himself to writing anonymous uncertainties!

Again, with regard to the Rochdale Show, how reliable is "A Member's" information! how exquisitely just his information! He says the Rochdale Show must have cost the Club £30, and then says he was at the Birmingham meeting. Had he either opened his ears or lifted one of the balance sheets on the table, he would have seen that the Show unfortunately cost the Club £128 (not £30 as he suggests)—viz., £75 guarantee money, and £53 from Club funds, and that though the entries paid the prize list, the receipts at the door amounted in three days to but £43, the rain having come down incessantly from end to end of the Show.

I may add that copies of the balance sheet were laid upon the Club table, as well as sent to each guarantor, and the promptitude with which those gentleman to a man paid the call after receiving the balance sheet needs no comment. What Mr. Tudman said at the meeting I have stated above. I am in possession of the shorthand-writer's notes, and the omission of the full report respecting Mr. Tudman's resignation and its causes was dictated by a desire to avoid personality.

As to what Mr. Tudman and Mr. Ashton did for the Club, the minute-book before me shows that they attended the first meeting, with many other gentlemen at Liverpool, but that they proposed no resolutions. They were appointed joint Secretaries—Mr. Ashton speedily resigned, and Mr. Tudman followed him twelve months after.

With regard to the Club costing half its subscriptions to work, I have only to point to the fact that the annual income is £57, a small amount of which is in arrear, that no less a sum than £40 has been paid this year out of the Club funds towards the Show, and that Mr. Tudman by his balance sheet had upwards of £12 in hand at the Birmingham meeting, the printing, stationery, and postage for the whole year being under £8.

In conclusion I would advise "A Member" ere he again rushes into print to get up his facts a little more accurately. It was only due to the members of the Club that this refutation should be written, but no further anonymous correspondents will be recognised or replied to by—F. W. Zurhorst, *Hon. Sec., Poultry Club, Donnybrook.*

POULTRY JUDGING.

I see quite enough to dishearten exhibitors in the present system of judging, and the rejection of the motions on this subject before the Poultry Club show that we have little hope of reform in that quarter. The Poultry Club has proved a disappointment. I agree for the most part with the letter of your correspondent lately on the subject. I make no charges of dishonesty against the judges, although I am quite aware that dishonest judges do exist. I think a vast deal of mischief arises rather from a friendly feeling towards local exhibitors, and a pertinacious interference of officials, than from any premeditated favouritism.

Not a sufficient number of judges is employed, too much is expected of them, and many of them are willing to believe that they are competent to judge in all classes. Everything connected with the fancy breeding of poultry is undefined, uncertain, and unsatisfactory. There is no point of authority. We have no fixed rules—no standard by which to work; everything seems to be a matter of taste and opinion.

With this feeling I attached myself to the Poultry Club; but however good a man the present Secretary may be, the

members do not seem inclined to do anything. Except the "Standard of Excellence," which with all its faults is a useful production, nothing has been done.

I am inclined now to go in for poultry as an article for food. I dare say you have seen Mr. Geyelin's circular, "Our System of Selling Poultry, and the Remedy." He has, I think, the right plan, but at present he fails in bringing it to bear.

The National Poultry Company may answer as a place for breeding and selling good birds, but there is a want of vigour there, and under the present system they will not produce any change.

You will think I am a general grumbler, but I am sure you will agree with me in many things. I want to work certain reforms, and I will do so, if possible, without angry feeling or personal attacks.—Egomet.

SUNDRIES.

In reply to "Clericus," before he accuses his "Black Country" dealer of imposition in the matter of his Partridge Cochin cock, he should be able to *prove* that some imposition had been practised. I do not think any person conversant with the changes of plumage that fowls undergo in moulting, would be satisfied with the simple statement offered by "Clericus." Changes from black to white are well authenticated, and would appear much more like "shameful dishonesty," than the case mentioned, and yet Dame Nature may be alone to blame.

In reference to "Poultry Show Neglects," and "Exhibitor," I can sympathise with him in the matter of catalogues and prize lists, though not as relating to Newport. I have before now in the pages of "our Journal," advocated certain courtesies to exhibitors. A ticket of admission is one courtesy I have advocated; it might induce the exhibitor to attend the show, he might purchase, and thus aid the funds; and in any case I do know this, that it gives the exhibitor a more lively interest in the welfare of the exhibition. As to catalogues, I feel that exhibitors ought to be the *first* persons considered. I have gone myself to an exhibition to find all the catalogues sold, though I had ordered one. It does appear to me that exhibitors are really the backbone of exhibitions. This may be diseased imagination on my part, but I think that as the great majority must be unsuccessful, it would be worth the while of managers to pat all on the backs, and show them some little attention. Let it be a rule at every exhibition, to dispatch by the first possible post a catalogue and prize list to every exhibitor. Would the managers of a large show lose £5 by such generosity? I should say, certainly not; but a very few exhibitors declining to enter at a second show would cause a loss of far more than £5 in entries.

Railway charges, however, seem likely still to be the stumbling block to increase of exhibitors. To myself quite recently, obtaining prizes has not been sufficient to preserve me from losing money by exhibiting. I have just paid 4*s*. 6*d*. for one hamper of Polish fowls (therefore not heavy), travelling one hundred miles on a single railway, and since that I have sent to the Newport Show three pens for 5*s*. 2*d*.; the return journey cost me 10*s*. 3*d*., the distance being under one hundred miles. Mr. Cork is right, most probably, in his reply to "Exhibitor." The railway should be blamed for detention. I can only say my birds returned from New Shoreham in capital condition. One cock has been exhibited three times successfully since that Show, without being any the worse. This could not be if he had suffered from neglect at Shoreham. The "Exhibitor" at New Shoreham might probably, with trouble, have traced the packages, and found out where the fault was. Perhaps he had better pocket the affront. My crusade against the railways has ended, as I think, in all poultry parcels being charged to me on our local railway 50 per cent. extra. I cannot help fancying that orders have been given to all clerks to look out for my name, and to lay it on heavily.—Y. B. A. Z.

INCUBATORS.

If "Edgworth" and "A Spanish Breder" will put themselves in communication with me, I shall be most happy to reply to their queries about my incubator.

I have endeavoured to construct it to be as perfect as possible in command over internal and external temperature—I believe hitherto the weak point—and I will guarantee that if one is fitted according to my instructions, it shall keep the requisite temperature, 102° to 103°, absolutely without variation; further, that if the slight extra expense is incurred of having my outer anti-radiation casings, many a mishap of the gas or lamp going out will have no evil effect, for the incubator shall keep its proper temperature for six hours without any heating medium whatever. One thing, however, I cannot guarantee when an incubator has gone out of my hands—that is, another's attention thereto.

Lastly, in reply to "H. Wilcocks." There must be some error, for Mr. Massey assures me all correspondence is duly answered. May I request "H. W." to write once more?—Fredk. Schröder, *Manager, National Poultry Company (Limited)*.

MANCHESTER POULTRY AND PIGEON SHOW.

Most amateurs of experience anticipated a first-rate Show this year at the Belle Vue Gardens, Manchester, and their anticipation was correct, for the Show of December 21st, 22nd, and 24th, has been by far the best of any yet held under the management of the Messrs. Jennison. This is not to be wondered at, for every successive year proves only the more certainly that no better place exists for the accommodation of a large show, nor can there be any more praiseworthy individuals as regards the general attention paid to every portion of the valuable live stock exhibited. In proof of what we have just stated, a large quantity of home-baked bread was expressly made on the premises, each loaf being from 5 to 6 inches thick, and about the size of the large flagstones used for paving our general thoroughfares. These immense loaves of bread, each pretty well as much as a man could lift, had been made a few days previously, and were consequently in excellent condition for the purposes intended, being not in the least clammy, but, on the contrary, sweet and good-flavoured. They were broken to small pieces, well soaked in cold water, and then mixed with barley flour, and this constituted the first food of the poultry after being taken from their travelling baskets. During the whole Show, once each day they were allowed a similar meal, the remainder of their food being a mixture of excellent barley and Indian corn. From this careful management doubts cannot exist but that many pens of poultry will actually be returned in far superior condition to that in which they were received at Manchester. Nor was the scrupulous care of the proprietors of the Belle Vue Zoological Gardens expended exclusively on the poultry, as a very large entry of dogs had also been consigned to them. To meet the requirements of this host of animals, quite a string of living horses arrived at the Gardens a few days previous to the meeting, nor was a single one of these animals slaughtered until it had undergone veterinary inspection to ascertain if it was perfectly free from constitutional disease. The quantity of this flesh when mixed with a due proportion of barleymeal would have staggered the belief of almost any one. The small toy and pet dogs were provided also with other kinds of food more especially adapted to their respective wants. This careful management, under so experienced a supervision, renders the Manchester Show so popular and well supported. It is by experience proved that railway companies are always among the last parties to avail themselves of suggestions, however urgently directed; but we cannot forbear once again drawing the attention of railway directors to the impolicy of putting dogs and poultry to travel in the same van, for we are informed several valuable pens of fowls were destroyed by their canine fellow-passengers during transit, to the no small annoyance of the owners of the poultry, and as inevitably to the ultimate serious loss of the railway companies themselves, who, as a matter of course, are legally liable for such gross neglect and mismanagement.

The arrangement of the pens throughout the whole Show was admirably adapted for the inspection of the public, and it would, indeed, be invidious to particularise the merits too closely of individual classes, when we are fortunately enabled to say that scarcely an indifferent class throughout the whole Show could be selected. The Grey *Dorkings* were most commendable, the young classes exhibited (of a cockerel and pair of pullets) proving exceedingly good and popular. A reference to the printed prize list will show our readers that in this, as in almost all other breeds throughout the Show, the premiums were very widely sown. Perhaps besides being one of the most extensive, the best class in the whole Show proved to be the young Black *Spanish*. Never had the Judges awarded prizes to better specimens, nor could their condition throughout the whole entry be surpassed. The *Crève Cœurs* mustered strongly, and were good; nor were the *Polands* less worthy of our highest praise. The *Game* classes were remarkably well filled, but the condition of many of the birds from the late wet weather was not equal to what it might otherwise have been. In *Cochins*, both the Buff and the Partridge-coloured ones, the Manchester Show held a very high position: they were evidently the picked birds of the kingdom, most of them having been specially reserved by their owners to test their quality at Belle Vue. The young Buff Cochins, although the first prize was £10, strange to say, undoubtedly proved by far the least deserving of any of the Cochin classes.

Geese, *Turkeys*, and *Ducks*, were shown in great abundance; and here, as usual, Mr. Charles Jennison exhibited a very well-filled class of a great variety of "fancy" water fowls, taken purposely from the pools of the Gardens. Another scarcely less interesting feature of the Show was a class composed of foreign *Doves*, some varieties being so

small as hardly to be larger than sparrows, though of the most exquisite colour and markings.

This class for Doves, and the collection of *Pigeons* with which they were closely connected, were literally thronged with visitors during the whole time the Show was on view. The weather being very favourable, everything went off most satisfactorily.

DORKING (Coloured, except Silver-Grey).—First, Mrs. F. S. Arkwright, Etwall Hall, Derby. Second, Viscountess Holmesdale, Linton Park, Staplehurst. Third, J. Anderson, Ruthven House, Meigle. Fourth, J. White, Warlaby, Northallerton. Highly Commended, E. Shaw, Plas Wilmot, Owestry; J. White. Commended, Hon. W. H. Fitzwilliam, Wentworth Woodhouse; Rev. J. F. Newton, Kirby-in-Cleveland; J. Robinson, Vale House, Garstang; W. H. Walker, Shenfield, Brentwood. *Hens.*—First and Second, Viscountess Holmesdale. Third, Mrs. F. S. Arkwright. Highly Commended, W. McConnell, Chelford, Manchester; Miss Davies, Wrexham Road, near Chester; Duke of Newcastle, Clumber Park, Notts; Mrs. A. Hurt, Alderwasley, Derby; H. Anderton, Leigh, Lancashire. Commended, T. Statter, Stand Hall, Whitfield, Manchester; Admiral W. Hornby, Knowsley Cottage, Prescot; Mrs. Dale, Falconer House, Scarborough. *Chickens.*—First, D. C. Campbell, M.D., Brentwood. Second, Viscountess Holmesdale. Third, T. Statter. Fourth, J. White. Highly Commended, Admiral W. Hornby; Viscountess Holmesdale; J. Anderson; D. C. Campbell, M.D.; Mrs. F. S. Arkwright. Commended, E. Longton, Woolton, Liverpool; Miss Davies. *Pullets.*—First, Duke of Newcastle. Second, Miss Davies. Third, D. C. Campbell, M.D. Highly Commended, Hon. W. H. Fitzwilliam; Miss Davies; Messrs. Gunson & Jefferson, Whitehaven; J. K. Fowler, Prehendal Farm, Aylesbury; Viscountess Holmesdale. Commended, Viscountess Holmesdale; J. Anderson.

DORKING (Rose-combed).—Prize, Viscountess Holmesdale. *Chickens.*—First and Second, Viscountess Holmesdale.

DORKING (White).—First, Second, and Third, H. Lingwood, Needham Market, Suffolk. Highly Commended, J. Robinson.

DORKING (Silver-Grey).—First, R. D. Holt, Orrest Head, Windermere. Second, Rev. T. O'Grady, Hognaston Vicarage, Ashbourne. *Hens or Pullets.*—First, Rev. T. O'Grady. Second, Miss Milne, Otterburn, Kelso. Highly Commended, D. Parsons, Cuerden, Preston; J. Hardie, Corbie Ewes, Langholm.

EXTRA DORKING PRIZES.—First, Admiral W. Hornby. Second, Messrs. Gunson & Jefferson. Third, J. Robinson. Commended, J. Anderson.

SPANISH.—*Cock.*—First, Messrs. Burch & Boulter, Sheffield. Second, H. Lane, Ashley Road, Bristol. Third, R. Teebay, Fulwood, Preston. Fourth, E. Jones, Berkley Place, Clifton. Highly Commended, T. B. Hartley, Heywood, Manchester; D. Parsley, Kingsdown, Bristol; R. Teebay; J. H. Wilson, St. Bees, Whitehaven. Commended, W. R. Bull, Newport Pagnell; J. Thresh, Bradford. *Hens.*—First, E. Jones. Second, H. Beldon. Third, E. Brown. Highly Commended, G. Bridle, Didsbury; Messrs. Burch & Boulter; J. Thresh; W. H. Walker. Commended, J. Stevens. *Chickens.*—First, D. Parsley. Second, Viscountess Holmesdale. Third, E. Jones. Fourth, T. Cliff, Hanley. Highly Commended, Miss Davies; Miss Biggar, Ecclefechan. Commended, E. Jones; A. O. Worthington, Newton Park, Burton-on-Trent; W. R. Bull; J. R. Rodbard; Hon. Miss D. Pennant, Penrhyn Castle, Bangor; Messrs. Burch & Boulter. *Pullets.*—First, J. Stephens, Walsall. Second, W. R. Bull. Highly Commended, T. B. Hartley.

EXTRA SPANISH PRIZES.—First, H. Beldon. Second, Third, and Highly Commended, R. Teebay. Commended, E. Brown, Sheffield.

COCHIN-CHINA (Cinnamon and Buff).—*Cock.*—First, E. Smith, Middleton, Manchester. Second, H. Tomlinson, Birmingham. Third, A. Fenton, Crimble Hall, Rochdale. Fourth, Rev. F. Taylor, Keastwick, Kirkby Lonsdale. Highly Commended, A. Fenton; R. White, Broomhall Park, Sheffield. Commended, G. Fell, Springfield, Warrington; R. White; H. Bates, Yardley, Birmingham; H. Mapplebeck, Woodfield, Moseley. *Hens.*—First, H. Tomlinson. Second, E. Smith, Middleton. Third, A. Fenton. Highly Commended, G. Fell; Rev. C. Spencer, College House, Attleborough; A. Fenton; Mrs. R. White. Commended, W. A. Taylor. *Chickens.*—First, H. Mapplebeck. Second, G. Fell. Third, Hon. Mrs. Sugden, Stapeley House, Nantwich, Cheshire. Fourth, A. Fenton. *Pullets.*—First, H. Mapplebeck. Second, T. Boucher. Highly Commended, Hon. Mrs. Sugden; Rev. C. Spencer; W. A. Taylor. Commended, Hon. Miss D. Pennant.

COCHIN-CHINA EXTRA PRIZES (Cinnamon and Buff).—First, A. Fenton. Second, J. Nelson, Heaton Mersey, Manchester. Third, C. Jennison, Belle Vue, Manchester. Highly Commended, A. Fenton.

COCHIN-CHINA (Brown and Partridge-feathered).—*Cock.*—First, R. White. Second, J. R. Rodbard, Aldwick Court, Wrington, Bristol. Third, A. Fenton. Highly Commended, E. Tudman, Whitchurch, Salop. Commended, Messrs. Bowman & Fearon, Whitehaven; E. Tudman; J. Elliott, Westleigh, Leigh; A. Fenton; J. R. Rodbard. *Hens.*—First, J. Stephens. Second, E. C. Stretch, Ormskirk. Highly Commended, E. Tudman; A. Fenton. Commended, E. Smith. *Chickens.*—First, E. Tudman. Second, J. Horrocks, Tonge, Middleton, Manchester. Third, E. C. Stretch. Commended, A. Fenton. *Pullets.*—First, J. Pool, Ulverston. Second, E. Smith, Highly Commended, E. Tudman; A. Fenton. Commended, E. C. Stretch; C. E. Ridsdale, Copley, Halifax.

COCHIN-CHINA (White).—*Cock.*—First, R. Chase, Balsall Heath, Birmingham. Second, F. W. Zurhorst, Donnybrook, Dublin. Commended, Rev. W. J. Mellor. *Hens.*—First, R. Chase. Second, F. W. Zurhorst.

EXTRA COCHIN-CHINA PRIZES.—First, R. Chase. Second, E. Tudman. Third, E. C. Stretch. Highly Commended, J. Holme. Commended, Hon. Mrs. Sugden; E. Tudman; H. Beldon; J. Horrocks.

BRAHMA POOTRA (Dark).—First, R. W. Boyle. Second, J. Stevens. Third, W. Hargreaves. Highly Commended, M. Brookshank. Commended, T. Pomfret; H. Lacy, Hebden Bridge; J. K. Fowler; G. H. Roberts.

BRAHMA POOTRA (Light).—First, A. O. Worthington. Second, C. Maples, jun.

BRAHMA POOTRA (Either variety).—*Cock.*—First, R. W. Boyle. Second, Col. Stuart Wortley. Third, J. Shorthose. Commended, C. Cork.

EXTRA BRAHMA POOTRA PRIZES (Any variety).—First and Second, T. Pomfret.

POLISH (Any variety).—First, Sir St. G. Gore, Bart. Second, P. Unsworth, Highly Commended, G. C. Adkins, The Lightwoods; Sir St. G. Gore, Bart.; T. Walmsley; H. Beldon; H. Carter; Mrs. C. W. Brierley. Commended, T. Walmsley. *Chickens.*—First, P. Unsworth. Second, Sir St. G. Gore, Bart. Highly Commended, G. C. Adkins; P. Unsworth. Commended, G. C. Adkins; R. Charlesworth, Manchester; Miss J. Baily, Hartley, Wintney, Hants.

CRÈVE CŒUR.—First and Second, W. Blinkhorn, Waterdale, near St. Helen's. Third and Highly Commended, Col. Stuart Wortley.

GAME (Black-breasted Reds).—First and Second, Sir St. G. Gore, Bart. Third, R. Scrimminger. *Cock.*—First, R. Pashley. Second, T. Gorton, jun., Cheetham Hill, Manchester. Third, R. Scrimminger. Highly Commended, Sir St. G. Gore, Bart; J. Halsall, Ince, near Wigan. Commended, F. J. Asthury, Charlotte Street, Manchester; Sir St. G. Gore, Bart.; C. P. Ackers, Bickersham, near Wigan; H. M. Julian. *Chickens.*—First and Fourth, Sir St. G. Gore, Bart. Second, S. Matthew. Third, W. Callender, Welshpool. Highly Commended, Sir St. G. Gore, Bart.; F. Sales. Commended, F. J. Astbury; J. Halsall.

EXTRA GAME PRIZES (Black-breasted Reds).—First, P. Norbury. Second, Mrs. Hay. Third, J. Anderson.

GAME (Brown and other Reds, except Black-breasted).—First, Sir St. G Gore, Bart. Second, T. Statter. Third, J. Wood. Highly Commended, Sir St. G. Gore, Bart; R. Pashley; S. Matthew. *Cock.*—First and Third, Sir St. G. Gore, Bart. Second, R. Scrimminger. Highly Commended, T. Statter; C. Chaloner; R. Swift. Commended, J. Fletcher; G. W. Cooper. *Chickens.*—First, Rev. F. Watson, Messing, Kelvedon, Essex. Second, J. Anderson. Third, E. Aykroyd, Girlington Road, Bradford. Fourth, J. Wood. Highly Commended, F. Sales; G. Clements; M. Billing, jun., Erdington. Commended, T. Statter; Sir St. G. Gore, Bart.

EXTRA GAME PRIZES (Brown and other Reds, except Black-breasted).—First, S. Matthew. Second, E. Aykroyd. Third, N. Grimshaw.

GAME (Black-breasted and other Reds).—*Hens.*—First, T. West. Second, W. Cox. Third, Sir St. G. Gore, Bart. Highly Commended, T. Robinson; G. Clements. Commended, W. Bourne; J. W. Harrison; C. Marlow. *Chickens.*—First, J. Wood. Second, J. Halsall. Third, W. W. Pyne. Highly Commended, H. J. Stokes. Commended, E. Aykroyd.

GAME (Duckwings, and other Greys and Blues).—First, Duke of Newcastle. Second, A. K. Briggs, Rawden, near Leeds. Third, S. Matthew, Stowmarket, Suffolk. *Chickens.*—First and Second, Sir St. G. Gore, Bart., Hopton Hall, Wirksworth, Derbyshire. Third, W. Horton, Albrighton, near Wolverhampton. Commended, J. Firth, Halifax.

GAME (except Black-breasted and other Reds).—*Cock.*—First, F. Sales, Crowle, Lincolnshire. Second, J. Charlton, Chapelthorpe, near Wakefield, Yorkshire. Third, Sir St. G. Gore, Bart. *Hen.*—First, J. Charlton. Second, Sir St. G. Gore, Bart. Commended, J. Firth; J. Halsall, Ince, near Wigan.

GAME (White and Piles).—First, Sir St. G. Gore, Bart. Second, T. West, St. Ann's, Eccleston, St. Helen's. Highly Commended, G. Wostenholme, Queen Street, Sheffield. Commended, Sir St. G. Gore, Bart. *Chickens.*—First, R. Scrimminger, Pailton, near Lutterworth, Warwickshire. Second, R. Pashley. Highly Commended, Sir St. G. Gore, Bart.

GAME EXTRA PRIZES (except Black-breasted and other Reds).—First, T. Burns, Ahram, near Wigan, Lancashire. Second, J. Anderson. Commended, P. Norbury, Bowden, Cheshire.

DUCKS (White Aylesbury).—First, Captain H. B. Lane, Bracknell, Berks. Second, J. K. Fowler. Third, E. Leech.

DUCKS (Rouen).—First, Sir St. G. Gore, Bart. Second, T. Burns. Third, T. Statter. Fourth, T. Wakefield, Golborne, near Newton-le-Willows. Highly Commended, E. Longton; T. Statter; Miss Davies; C. P. Ackers; E. Leech; J. Nelson; S. H. Stott; J. Holme, Knowsley, Prescot, Lancashire. Commended, A. Fenton.

DUCKS (Black East Indian).—First, A. Fenton. Second, C. Sidgwick.

DUCK EXTRA PRIZES (Any variety).—First, Messrs. Gunson and Jefferson. Second, R. Leech. Third, T. Wakefield.

ORNAMENTAL WATER FOWL.—First, J. Jennison (Black Swans). Second, S. A. Wyllie, East Mousley, Surrey (Mandarin Ducks). Third, J. Jennison, Belle Vue, Manchester (Carolinas). Highly Commended, A. O. Worthington, Burton-on-Trent (Fancy Geese and Canadian Geese); E. Longton; Mrs. C. W. Brierley, Middleton, Manchester (Mandarins); J. Jennison (Mandarins, Shieldrakes, Pintail, Barnacle Geese, Brent Geese).

GEESE (White).—First, Messrs. J. & W. Rostron, Levenshulme, Manchester. Second, W. Gamon, Chester. Third, R. Harper, Reddish, near Manchester. Commended, Messrs. J. & W. Rostron.

GEESE (Grey and Mottled).—First, J. K. Fowler. Second, S. H. Stott, Quarry Hill, Rochester. Third, Rev. W. J. Mellor, Colwick Rectory, near Manchester. Highly Commended, J. Hardie.

TURKEYS.—First, E. Leech, Rochdale. Second, Mrs. Dale. Third, J. Smith, Breeder Hills, Grantham. Highly Commended, F. E. Richardson, Bramshall, Uttoxeter; S. Lang, jun., Barrow, near Bristol; S. H. Stott; R. Leech, Rochdale. *Poults.*—First, E. Leech. Second, J. Smith. Third, Mrs. Dale. Highly Commended, Miss Davies; J. Anderson; F. E. Richardson; J. Hardie; E. Leech.

EXTRA STOCK (Any variety of Fowls not before named).—First and Second, S. A. Wyllie (La Flèche and Houdan). Third, Col. Stuart Wortley (French Fowls).

HAMBURGH (Black).—First, C. Sidgwick, Keighley, Yorkshire. Second, G. Lingard, jun., Selly Oak, Birmingham. Commended, R. S. Moore, Gateacre, near Liverpool. *Chickens.*—First, J. Lancashire, Tonge, Chadderton, near Manchester. Second, J. Fielding, Newchurch, near Manchester. Very Highly Commended, R. Goodwin, Middleton, Manchester. Highly Commended, J. Jackson, Bury, Lancashire. Commended, J. Harrop, Middleton, Manchester; G. Lingard.

HAMBURGH (Golden-pencilled).—*Chickens.*—First, T. Wrigley, jun., Tonge, Middleton. Second, J. E. Powers, Biggleswade, Bedfordshire. Third, F. J. Astbury. Highly Commended, H. Beldon. Commended, T. Walker, jun., Denton, near Manchester. *Cock.*—First and Third, T. Wrigley, jun. Second, A. Bamford, Tonge Lane, Middleton. Highly Commended, R. MacGregor, Perth, N.B.; J. E. Powers; W. Hargreaves, Bacup, Lancashire.

HAMBURGH (Silver-pencilled).—*Chickens.*—First, H. Beldon. Second, J. Walker, Haya Park, Knaresborough. Third, T. Sharples, Rawtenstall. Highly Commended, J. Thresh. *Cock.*—First, H. Beldon. Second, T. Sharples. Highly Commended, J. Parr, Barton-on-Irwell. Commended, B. Bee.

HAMBURGH (Pencilled).—First, A. O. Worthington. Second, J. E. Powers.

PENCILLED HAMBURGH EXTRA PRIZES (Either variety).—First, J. E. Powers. Second, H. Beldon.

HAMBURGH (Golden-spangled).—*Chickens.*—First and Second, J. Rae, Abfield, Manchester. Third, N. Marlor, Darton, Manchester. Highly Commended, J. Buckley, Taunton, Ashton-under-Lyne; J. Andrew, Waterhouses, Ashton-under-Lyne; J. Ogden; T. Scholes, Hollinwood.

Manchester; E. Brierley. Commended, W. Horton; J. Buckley; W. A. Hyde; T. Scholes; J. Parr; H. Carter, Upperthong, Holmfirth; J. Walker. *Cock*.—First, J. Ogden Second, T. Walker, jun Third, W. A. Hyde, Ashton-under Lyne Highly Commended, J. Roe; J. Buckley; N. Marlor. Commended, E. Brierley; H. Carter.

HAMBURGH (Silver-spangled).—*Chickens*.—First, J. Fielding. Second, J. A. Taylor. Third, J. Walker. Highly Commended, H. Beldon; J. Lancashire. Commended, J. Fielding; J. Jackson; Mrs. A. Hurt. *Cock*.—First, T. Sharples. Second, J. Fielding. Commended, T. Wrigley, jun.

HAMBURGH (Spangled).—*Hens*.—First, J. Ogden. Second, J. Roe. Very Highly Commended. T. B. Hartley; J. Fielding Highly Commended, T. Scholes; N Marlor; J. Walker Commended, J. Buckley.

SPANGLED HAMBURGH EXTRA PRIZES.—First, N. Marlor. Second, J. Andrew.

GAME BANTAMS (Black-breasted and other Reds).—First, J. Fryer, Staveley, Derbyshire. Second, J. Crosland, jun. Third, G. Smith. Fourth, J. W. Morris. Highly Commended, H. Ashton, Polefield, Prestwich; D. Parsons; G. R. Davies; Miss E. A. Crawford. Commended, Sir St. G. Gore, Bart.; A. Fenton; J. Holme; R. MacGregor.

GAME BANTAMS (Any other variety).—*Chickens*.—First, J. Crosland, jun. Second, Sir St. G. Gore, Bart. Third, Rev. W. J. Mellor.

GAME BANTAM.—*Cocks*.—First, J. Barr, Swan Island, Atherton, near Manchester. Second, Mrs. C. W. Brierley. Third, J. Crosland, jun. Fourth, G. Griggs Highly Commended, F. L. Roy, jun.; A. Fenton; J. A. Taylor; Miss E. A. Crawford. Commended, Sir St. G. Gore, Bart.; G. R. Davies; W. Parker.

GAME BANTAM (Any variety).—*Hens*.—First, S. Lang, jun. Second, W. M'Connell. Commended, J. Anderson.

GAME BANTAM EXTRA PRIZES (Any variety).—First and Third, D. Parsons. Second, J. Barr.

BANTAMS (Any variety except Game).—First, A. K. Briggs (Black Bantams). Second, M. Leno (Gold-laced). Third, G. Griggs (Speckled-booted Bantams). Highly Commended, F. L. Roy, jun. (Silver-laced Sebright); H. Ashton (White-booted); J. W. Morris (Black Bantams).

PIGEONS.

POWTERS (Any colour).—First, J. Thackray, Petergate, York. Second, F. Crossley, Elland, near Halifax. Highly Commended, J. K. Harvey, M.D, Cork; E. E. M. Royds, Greenhill, Rochdale.

CARRIERS (Black).—*Cock*.—First, J. Firth, jun., Webster Hill, Dewsbury. Second, F. Crossley. *Hen*.—First and Second, F. Crossley.

CARRIERS (Any other colour).—*Cock*.—First, G. H. Roberts, Penwortham, Preston. Second, A. Mangnall, Broughton. *Hen*.—First, J. Hawley, Bingley, Yorkshire. Second, A. Lowe, Over Hutton, near Bolton. *Young Birds*.—First, J. Hawley. Second, F. Else, Westbourne Grove, Bayswater, London. Third, G. H. Roberts. Commended, M. Hedley, Claremont Green, Redhill, Surrey.

DRAGONS.—First, H. Yardley, Market Hall, Birmingham. Second, J. Percivall. Highly Commended, H. Yardley. Commended, F. Crossley.

ANTWERPS.—First, S. A. Taylor, Sutton Coldfield, near Birmingham. Second, J. Hawley. Highly Commended, S. A. Hawley.

JACOBINS (Any colour).—First, T. H. Ridpeth, Rusholme. Second, J. Mur, Glasgow. Commended, A. Mangnal

NUNS.—First, F. Else. Second, C. Bulpin, Bridgewater, Somerset. Commended, H. B. Whittaker, Alkrington, Middleton.

RUNTS.—First, T. D. Green, Saffron Walden, Essex. Second, E. E. M. Royds, Greenhill, Rochdale. Highly Commended, H. Yardley.

BARBS.—First, J. Gell, York. Second, J. Thackray. Highly Commended, J. Fielding, jun., Rochdale. Commended, J. Thackray.

TURBITS.—First, J. Thackray. Second, C. Bulpin. Highly Commended, J. Hawley.

OWLS.—First, F. Crossley. Second, J. Fielding, jun. Highly Commended, J. Fielding, jun.; J. Baily, jun.

TRUMPETERS.—First, J. Hawley. Second, W. H. C. Oates, Besthorpe, Newark, Notts. Highly Commended, J. Firth, jun. Commended, J. Thackray.

FANTAILS.—First and Second, H. Yardley. Highly Commended, F. Else.

TUMBLERS (Almond).—First, J. Thackray. Second, R. Fulton, Deptford. Third, F. Crossley.

BEARDS.—First, J. Thackray. Second and Highly Commended, W. H. C. Oates.

BALDS.—First, T. H. Ridpeth. Second, J. Fielding, jun. Highly Commended, J. Hawley.

TUMBLERS (Any other variety).—First, J. Thackray. Second, R. Fulton. Highly Commended, J. Fielding, jun.; E. E. M. Royds

ANY OTHER VARIETY NOT BEFORE NAMED.—First, Third, and Highly Commended, J. Baily, jun. (German Toy, Archangels, and Austrian Powters). Second, H. Yardley.

DOVES (Any variety).—First, Second, and Highly Commended, J. Jennison, Zoological Gardens, Manchester (Chinese Doves, French Doves, and Stock Doves).

RABBITS.

BLACK AND WHITE.—First, J. Read, Coventry. Second, W. Newsome, Leeds.

YELLOW AND WHITE.—First, W. Stelfox, Greenheys. Second, J. Taylor, Sheffield.

TORTOISESHELL.—First and Second, G. F. Jones, Bootham, York. Highly Commended, H. Handford, Wilford, Notts.

BLUE AND WHITE.—First, G. F. Jones Second, W. Newsome.

GREY AND WHITE.—First, W. Stelfox. Second and Highly Commended, H. Handford.

SELF-COLOUR.—First, J. Taylor. Second, J. Reed. Highly Commended, H. Handford.

LONGEST EARS.—First, W. Newsome. Second, G. Mellor, Macclesfield. Highly Commended, E. E. M. Royds, Green Hill, Rochdale

ANGORA.—Prize, A. Parry, Rochdale. Highly Commended, C. Rayson, Prestwich, Manchester.

OTHER FOREIGN RABBITS.—First and Highly Commended, S. A. Wylie, East Moulsey, Surrey (Leporides). Second, D. Barker, Cheadle Hulme (Himalayan).

JUDGES.—*Dorkings, Spanish, Cochins, Brahmas, and Crève Cœurs:* Mr. Edward Hewitt, Sparkbrook, Birmingham, and Mr. W. B. Tegetmeier, Muswell Hill, London. *Game, Game Bantams, &c.:* Mr. J. H., Smith, Skelton Grange, York, and Mr. R. Teebay, Fulwood, Preston, *Hamburghs, Polands, Ducks, &c.:* Mr. James Dixon, North Park Bradford, and Mr. S. Fielding, Trentham. *Pigeons:* Harrison Weir, Esq., Peckham, London, and T. J. Cottle, Esq., Cheltenham. *Rabbits:* Mr. Henry Yardley, Market Hall, Birmingham.

HECKMONDWIKE POULTRY SHOW.

DECEMBER 26TH.

A GOOD number of first-class birds were exhibited, and the visitors seemed highly gratified while examining the various classes of birds shown. The Committee consider the Exhibition a success, and feel in a measure repaid for the labour bestowed in connection with it.

GAME (Black-breasted Red).—First, Extra, and Second, G. Noble, Staincliffe. Highly Commended, W. Fell, Adwalton.

GAME (Brown-Red).—First, J. Hodgson, Bowling Old Lane, Bradford. Second, H. C. Mason, Drighlington. Highly Commended, W. H. Robinson, Long Lee, Keighley; T. Kilburn, Batley Carr. Commended, J. Ineson, Staincliffe.

GAME (Duckwings and other Grey and Blue).—First, W. Fell. Second, C. Smithson, Heckmondwike. Highly Commended, W. Kellett, New Road, Birstal; J. Elam, Heckmondwike. Commended, W. Fell.

GAME (White and Pile).—First H. C. Mason.

GAME (Black and Brassy-winged).—First J. Ineson. Second, J. Ibbotson, Gomersal.

GAME BANTAM (Red).—Extra Cup and First, C. Clegg. Second, G. Noble.

GAME BANTAM (Duckwing).—First, J. Hirst, Hillhouse, Heckmondwike. Second, J. Elam. Highly Commended, J. Ibbotson; H. Shepley, Carlinghow. Commended, — Armitage, Gomersal.

BANTAM (Black).—First, J. Parker, Heckmondwike. Second, S. Schofield, Heckmondwike.

SPANISH (Black).—First, W. H. Charlesworth, Newhouse, Huddersfield.

HAMBURGH (Golden-spangled).—First, H. Firth, Dudley Hill, Bradford. Second, J. F. Loversedge, Newark, Notts.

HAMBURGH (Pencilled).—First, J. Ibbotson.

COCHIN-CHINA.—First, H. Firth Second, S. Schofield.

ANY OTHER DISTINCT BREED.—First, P. Greenwood, Rawfolds, Cleckheaton.

GAME (Red).—First, W. Fell. Second, G. Noble.

GAME (Any colour).—*Hen*.—First, — Suddick, Tong Street, Dudley Hill, Bradford. Second, G. Noble.

EXTRA.—First, J. Brooke. Second, G. Noble. Eighly Commended, J. Elam; J. Beaumont.

JUDGES.—Mr. J. W. Thompson, Southowram; Mr. Enoch Hutton, Pudsey; and Mr. Mason, Rochdale.

MUNSTER POULTRY SHOW.

ON December 20th, the Exhibition of Poultry, Pigeons, song and ornamental birds was opened in the new market, which was appropriately decorated for the occasion. The pens were arranged on stands in rows, so as to give intermediate space between each row for a promenade, enabling the visitor to see every bird in the Exhibition.

The entries amounted to 444, and the Exhibition was decidedly the finest of the kind ever held in Munster, or perhaps in Ireland, and in the opinion of the gentlemen selected to judge of the merits of the various classes, is highly creditable to Limerick.

The department for Pigeons, singing and ornamental birds, was a source of the greatest attraction. Mr. Corbett, of Castleconnell, exhibited a complete aviary, composed of foreign and native birds, both song and ornamental, and it is not too much say his birds would form an exhibition in themselves, for this gentleman has perhaps the finest private collection of this kind in Ireland.

In the *Pigeon* classes there was a keen competition in consequence of the superior quality of those exhibited. Mr. A. W. Shaw gained the medal for the greatest number of points in Pigeons, and Mr. Perrott, of Cork, won the silver cup for the best pair of Powters of any age or colour. The collections of those gentlemen were very extensive, and remarkable for the beauty exhibited by the birds they contained, and they likewise were great objects of attraction to visitors, particularly to connoisseurs. In the poultry department the entire collection was worthy of admiration; and to those who are not rearers of fowl it showed to what perfection those birds required for domestic use can be bred, and how lamentably deficient Ireland has been hitherto in their rearing. Now that this Exhibition has been so great a success, let us hope that it will lead to the establishment of a permanent Society in Limerick, so that in the course of a few years it will not only take the lead in this country, but that it will result in establishing annual exhibitions of all kinds of fowl equal in extent and breed with the most favoured ones in England. Ireland is eminently adapted for being a first-class fowl-breeding country; and we see no obstacle that could not be overcome in having as good a breed as that which exists in England.—(*Chronicle*).

DORKING (Coloured or Silver-Grey).—First, F. W. Zurhorst, Belville Donnybrook. Second, R. P. Williams, Clontarf, Dublin. Highly Commended, J. C. Cooper, Limerick. Commended, Mrs. Fosberry, Clorane, Kildimo; T. O'Grady, Roughgrove, Bandon. *Chickens*.—First, T. O'Grady. Second, Major Vandeleur, Limerick. Highly Commended, F. W. Zurhorst; J. C. Cooper. Commended, T. O'Grady.

SPANISH.—First, R. P. Williams. Second, J. C. Cooper. Highly Commended, Miss E. de C. Drevar. Commended, A. Comyns, jun. *Chickens*.—First, A. Comyns, jun. Second, R. P. Williams. Commended, R. P. Williams; J. C. Cooper.

GAME (Black or Brown-breasted).—First and Second, J. C. Cooper. Commended, J. Purcell, Carrig.

GAME (Any other variety).—First, A. E. Allen, Cork. Second, J. C. Perry, Browning's Town, Cork.

COCHIN-CHINA (Cinnamon or Buff).—First and Second, F. W. Zurhorst. Highly Commended, R. P. Williams. Commended, F. W. Zurhorst.

COCHIN-CHINA (Brown or Partridge-feathered).—First, C. F. Staunton, Clondalkin. Second, J. C. Fitzgerald, Abingdon House, Murroe.

COCHIN-CHINA (White or Black).—First and Second, F. W. Zurhorst. Highly Commended, A. Comyns, jun.

BRAHMA POOTRA (Dark).—First, R. W. Boyle, Bray, Co. Wicklow. Second, J. C. Perry. Highly Commended, J. C. Cooper.

LA FLÈCHE.—First, F. W. Zurhorst. Second, J. C. Cooper.

MALAY.—First and Second, J. C. Cooper.

CRÈVE CŒUR.—First, J. C. Cooper. Second, D Sullivan, Ballybrown.

HOUDAN.—First, F. W. Zurhorst. Second, J. C. Perry. Commended, J. C. Cooper.

SULTAN FOWL.—First and Highly Commended, F. W. Zurhorst. Second, J. C. Cooper.

WHITE-CRESTED BLACK OR BLACK-CRESTED WHITE FOWL.—First and Second, Miss E. de C. Drevar.

GOLDEN OR SILVER-CRESTED FOWL.—First and Second, W. Sylvester, Sheffield. Highly Commended, R. P. Williams.

HAMBURGHS (Golden or Silver-pencilled).—Prize, F. W. Zurhorst.

HAMBURGHS (Golden or Silver-spangled).—First, J. C. Perry. Second, R. P. Williams.

GAME BANTAMS.—First and Second, C. F. Staunton, Castleconnell. Commended, W. Corbett; J. Lloyd, Warren's Place, Cork.

BANTAMS (Any other variety).—First, Miss F. Croker, Ballynagarde, Limerick. Second, F. W. Zurhorst.

ANY OTHER VARIETY OF FOWL.—First, W. Corbett. Second, J. C. Perry. Commended, R. Wheeler; Capt. Gilbert, Killaloe.

DUCKS (Rouen).—First, R. P. Williams. Second, T. Hollis, Reading. Third and Highly Commended, J. C. Cooper. Commended, Lady Clarina, Elm Park, Clarina.

DUCKS (White Aylesbury .—First and Third, F. W. Zurhorst. Second, R. P. Williams. Highly Commended, F. W. Zurhorst; R. P. Williams; D. O'Grady. Commended, J. C. Cooper.

GEESE (White).—First and Second, J. C. Cooper. Third, W. Corbett. *Goslings.*—First and Second, J. C. Cooper. Third, S. F. Dickson, Vermont, Limerick.

GEESE (Grey and Mottled).—First and Second, J. C. Cooper. *Goslings.*—First and Second, J. C. Cooper. Third, T. Costelloe, Murroe. Commended, J. C. Cooper; S. F. Dickson.

TURKEYS.—First, T. Hollis. Second, F. W. Zurhorst. *Poults.*—First and Second, J. C. Cooper. Third, Mrs. E. E. Llewellyn.

SELLING CLASS (Any distinct variety).—First and Second, Capt. Gilbert. Third Mrs. Webb, Knocklong. Highly Commended, R. P. Williams; Capt. Gilbert; J. C. Cooper. Commended, J. Christie; Capt. Gilbert; J. C. Cooper.

Cup (value five guineas), for the greatest number of points in poultry, J. C. Cooper.

SINGLE COCKS.

DORKING (Any colour).—First, D. O'Grady, Ballynorth, Pallaskenry. Second, R. P. Williams. Commended, J. C. Cooper.

SPANISH.—Prize, J. Bresnahan, Limerick.

GAME.—First, J Downey, Garvey's Range. Second, P. Mack, Newtown.

COCHIN-CHINA.—First and Second, F. W. Zurhorst.

BRAHMA POOTRA.—First, R. W. Boyle. Second, F. W. Zurhorst.

COTTAGERS' PRIZES.

ANY DISTINCT BREED.—First and Third, J. Christie, Ballybrown. Second, P. Enright, Muckinich. Fourth, Mrs. M. Switzer, Clarina.

DUCKS.—First, Mrs. M. McMahon, Cooper Hill. Second, T. McMahon. Third, Mrs. M. Switzer.

PIGEONS.

POWTERS Yellow, Red, Mealy, or other colour).—First, J. H. Perrott Cork. Second, A. W. Shaw, Limerick. Highly Commended and Commended, A. W. Shaw; J. H. Perrott.

POWTERS (Black-pied and Blue).—First and Second, J. H. Perrott. Highly Commended, Dr. Harvey, Cork; J. H. Perrott. Commended, J. H. Perrott.

POWTERS (White).—First, Dr. Harvey. Second, J. H. Perrott. Highly Commended, A. W. Shaw.

CARRIERS (Black).—First and Second, G. Wherland, Cork. Very Highly Commended, G. Wherland. Highly Commended, A. W. Shaw. Commended, A. W. Shaw; Dr. Harvey.

CARRIERS (Dun).—First and second, G. Wherland. Highly Commended, A. W. Shaw.

CARRIERS (Blue or other colour).—Second and Highly Commended, A. W. Shaw.

SHORT-FACED TUMBLERS (Almonds).—First, Dr. Harvey. Second, A. W. Shaw. Very Highly Commended and Highly Commended, A. W. Shaw.

SHORT-FACED TUMBLERS (Kites or whole feathers).—First and Second, A. W. Shaw.

SHORT-FACED TUMBLERS (Mottles or other colour).—First and Second, A. W. Shaw.

COMMON TUMBLERS (Balds or Beards).—First, Second, and Commended, A. W. Shaw.

COMMON TUMBLERS (Ermine or Fawn-booted).—First and Second, C. Cooper, Cooper Hill, Limerick.

BARBS (Black).—First, G. A. Wherland. Second, C. F. Staunton. Highly Commended, G. A. Wherland; J. H. Perrott.

BARBS (Any other colour).—First and Second, J. H. Perrott. Commended, G. A Wherland.

JACOBINS (Red or Yellow).—First and Second, J. H. Perrott Commended, C. F. Staunton; J. Lloyd; T. O'Grady.

JACOBINS (Any other colour).—First, and Second, T. O'Grady.

FANTAILS (White .—First, J H. Perrott. Second, C. F. Staunton. Highly Commended, J. H. Perrott. Commended, T. O'Grady.

FANTAILS (Any other colour).—Prize, J. W. Edge, Birmingham.

OWLS (Blue or Silver).—First, C. F. Staunton. Second, J. H. Perrott.

OWLS (Any other colour).—First, A W. Shaw. Second, J. W. Edge.

TRUMPETERS (Mottles).—First, J. H. Perrot. Second, A. W. Shaw. Highly Commended, J. H. Perrott.

TRUMPETERS (Any other colour).—First, C. F. Staunton. Second, T. O'Grady.

TURBITS.—First, A. W. Shaw. Second, F. Waitt, Sparkbrook, Birmingham. Highly Commended, F. Waitt. Commended, C. F. Staunton; T. O'Grady.

NUNS.—First, T. O'Grady. Second, A. W. Shaw.

ANY OTHER VARIETY OF MERIT.—First, J. Lloyd. Second, J. H. Perrott (Brunswicks). Extra Second, W. Corbett. Highly Commended, F. Broemel, Ladywell, Kent; F. Waitt; J. W. Edge. Commended, F. Waitt; J. Lloyd

FOR THE BEST PAIR OF POWTERS (Any age or colour).—Cup, J. H. Perrott.

MEDAL.—A. W. Shaw.

CANARIES.

YELLOW (Belgian).—First and Second, W. Corbett. Commended, T. Fitzpatrick, Catherine Street, Limerick.

BUFF (Belgian).—First, Mrs. La Touche, Newbridge, Co. Kildare. Second, W. Corbett.

VARIEGATED (Belgian).—First and Second, Mrs. La Touche.

CRESTED OR OTHER VARIETIES.—First and Second, W. Corbett. Highly Commended, Mrs. La Touche; Miss F. Croker, Ballynagarde, Limerick. Commended, Mrs. La Touche.

GOLDFINCH MULE.—First and Second, Hon. E. Roche, Whitegate, Cork. Highly Commended, J. Lynch, Limerick. Commended, Miss F. Croker.

LINNET MULE.—Prize, C. Cooper.

ORNAMENTAL WATERFOWL.—First, Second, and Third, R. P. Williams.

ORNAMENTAL BIRDS.—Highly Commended, W Corbett.

The following were the Judges:—*Poultry and Pigeons:* Mr. P. Jones, Fulham, London; *Small Birds:* Mr. James Keating, Cork; Mr. John Donoghue, Limerick.

HIVE OVERTURNED.

AN accident has happened in my apiary which has doubtless occurred to many others. The night of the 13th-14th of December was very boisterous here, and after long-continued rains the ground had become much and deeply saturated; on Friday morning the news was brought me that a stock of bees had been blown over, and I found my only remaining primitive hive standing out on a post driven into the ground had come to grief, the pedestal having given way with the weight. The hive with its contents, after having rolled 12 or 14 yards down an inclined plane, had fortunately righted itself as to position, and the poor bees, ever ready to make the best of matters, had collected and clustered, with the exception of those crushed and a knot on the two or three bits of comb that had tumbled out in the descent, on the only comb that had not been detached, and which remained up inside the hive. The great mass of ruin was on the ground under the hive, the honey of course running out.

Having ascertained the state of affairs, I called to my gardener to bring his spade, and, making it quite clean, we pushed it under the comb and hive, and in that manner lifted the lot on to a floor-board, and carried it to another stand near to its former place, but more secure. We then placed a tea-tray under the lip or landing-board to catch the honey that was draining out, and on this, an inch or so above its surface, a piece of perforated zinc to give the bees that might come out with it a chance of escape from drowning. I then left them until the evening, when I took away the floor-board with the great mass of *débris*, and put in its place a clean dry one with some sealed combs of honey, to enable the bees to go in and out with safety. On Saturday there was a great commotion cleaning up the outside honey, not only by the rightful owners, but also, I feared, by robbers from stocks not far distant; and yesterday, to be certain, I placed more honey outside, and soon perceived proof of their being robbed, some slaughter being caused by fighting, although the thieves had the worst of it.

I now propose feeding by filling a short-necked water-bottle with honey and sugar, tying muslin or the like over the opening, and placing it inverted in the hole at the top of the hive, cut for supering. Will this plan, by giving the necessary quantity of food, save the bees? (I could not see the queen among the two or three hundred killed, so trust she is safe), or could you under the circumstances suggest a better plan?—A. T.

[With only one comb remaining in the hive and at this season, a fatal issue appears almost inevitable. Still, with the exceptionably mild weather we are now experiencing, and in the genial climate of Jersey, the poor bees may possibly have the ghost of a chance; but in order to enable them to avail themselves of it, food should be given in a wide-mouthed pickle-bottle, which should be perseveringly refilled as rapidly as it is emptied. The stock would, however, have a better chance of surviving if the broken combs were pieced together, and the whole fitted into frames and retained therein by means of strips of wood, zinc clips, or any other mode which your ingenuity may suggest. When the job is complete, the combs

should be placed in a hive, and the bees either knocked out or brushed from their present domicile on to the top of the frames, whence they will find their way down between the combs. The remaining comb should now be cut out of the old hive, fitted into a frame, and added to the others, and, the crown-board being put on, the hive should be placed on the old stance. After the expiration of two days, advantage should be taken of the first few hours of mild weather to open the hive and remove the artificial supports from all the combs which have been fixed by the bees, after which the necessary supply of food must be furnished as rapidly as possible by means of an inverted pickle-bottle.]

SWARMS DESERTING THEIR HIVES.

I FIND in page 476 a few remarks on the subject of bees leaving one of Neighbour's hives shortly after they were hived, which appears in your opinion to have been caused by the smell of the wood. I cannot say that I coincide in this idea. I had once two swarms which were put into two straw hives in one day, but to my mortification they deserted their hives a few hours after being hived and flew away. This took place in my early days, but since then I have not in one instance had any difficulty of this kind to contend with, although I have hived several hundreds of swarms, some of which I have put into wood, straw, and glass hives. I have also stocked Nutt's collateral boxes, Woodbury bar-frame boxes, Stewartons, Langstroths, and boxes invented by myself known as Addey's ten-bar sliding boxes, likewise Neighbour's and other kinds, of which some were newly painted inside, and others not painted at all. I once put swarms into some straw hives which were sewn with tarred twine and used as soon as made; but I have not in one instance had the bees leave after hiving since I made a practice of cementing wax inside at the top in such a way that the bees can attach their combs to it. With irons made expressly for the purpose I cement a bit of comb to the top before hiving, and in boxes which contain bar-frames I coat them with wax inside, and fix small bits of combs under the top part of each bar; by so doing I have escaped the difficulty which many apiarians have had to contend with.

I may add, that I admire the humane principle, having during the last autumn taken not less than two hundred stocks of condemned bees in this neighbourhood to make unions of, and I shall always feel it a pleasure to impart information on the humane system of management.—THOS. ADDEY, SEN.

HOW LONG MAY A ROYAL CELL REMAIN SEALED?

I NOTICED a singular circumstance in raising queens this year. After having supplied a queenless stock with some brood-comb under a bell-glass on the top of the hive, as is my custom, three queen cells were started, one of which was sealed over in thirty hours after it had been commenced, whilst the other two were not sealed till four days after, and both emerged from their cells on the twelfth day; yet, strange to say, the one that was first sealed was not hatched until the fourteenth, being about eleven and a half days after being sealed.—A LANARKSHIRE BEE-KEEPER.

OUR LETTER BOX.

YORKSHIRE SOCIETY'S POULTRY SHOW.—The first prize for Cochin-China (Yellow or Buff), was awarded to Henry Steward, Laurel Villa, Bishopsthorpe, York.

ANALYSES OF EGGS (*W. H. M.*).—We are obliged by your communication; but we have several much fuller and more particular analyses by Dr. Prout and others.

GAME FOWLS (*Query*).—"I do, of course, include hens in stating that Brown Reds stand first for shape and carriage. The best Game hens are the Dark Grey and Brown Red hens, with dark combs and faces; these are always the gamest and hardest. If by Blood hens is meant Red Blood hens, which is the correct meaning, the hens of the Cheshire Piles, and the White-legged wheaten hens are the best, as described by me in page 436, together with the other red-eyed breeds there mentioned. Game hens should be short in body, and rather upright and erect, with sloping backs. Hens carrying their backs level or horizontal are less spirited birds. The sportsmen's breeds described by me lately are all the best breeds for spirit. I mean to give some further notes on Game fowls, if possible, soon; on judging and breeding them first. Having visited Batavia in Java, Singapore in Malacca, and the coast of China in 1849 and 1850, and Spanish America previously, I can also give some notes on the wild Indian breeds, and on the sorts used for fighting in those countries, such as Gallus Bankiva, Sonneratii, giganteus, æneus, furcatus, Stanleyi, Jungle Fowl, Firebacks, and a few other foreign breeds. Should "QUERY" wish to write to me privately he can have my address, and I will willingly answer his queries to the best of my ability. There were two slight errors or misprints in my article in page 436. In Dark Black-breasted Reds 'clear-hackled' is spelt 'clean-hackled;' and in Red Duns 'dark shade' is made 'dark shape' as to the legs.—NEWMARKET."

KEEPING POULTRY PROFITABLY (*F. J. C.*).—Mr. Brent in his notes upon this subject, meant that if eggs only were desired he would recommend White Dorkings to be kept. If chickens only, then Brahma Pootra hens and a Houdan cock. To keep the breeds pure if allowed to run together in a farmyard would be impossible. We have found for both eggs and chickens either Dark Cochin-China or Brahma Pootra pullets and a coloured Dorking cock were productive.

VARIOUS (*F. T.*).—We never give salt to fowls. Citrate of iron is only given to individual fowls afflicted with leg-weakness. Four grains daily is the dose. If bruised oats are the food given to fowls, and they have a good grass run, there is no need for soft food, except that a change occasionally is always desirable.

PRODUCTION OF EGGS, &c., (*Aliquis*).—We published Mr. Brent's notes, and you will see an answer to-day to another correspondent. It is not usual for a Grey Dorking cock to lose all his black feathers and become quite white the third year. Many poultry-breeders in 1867 will keep journals who never kept them before, and we hope will send us the results of their experience.

POULTRY RUN GLAZED (*Frances*).—Do not have it heated. Being glazed it will be quite warm enough for early chickens, even in the severest weather.

LEG-WEAKNESS (*Constant Subscriber*).—The weakness you speak of, apparent in your Houdan cockerel, is unusual at this time of year, or in the breed you keep. We therefore seek for some other cause. Is your poultry-house paved, bricked, or boarded? Either would cause it. There is no healthy flooring to a poultry house but earth. Either of the floors we have mentioned causes an unnatural action of the feet (toes), and they induce cold in the limbs, which causes the weakness you complain of. At this season of the year you have little hope of a cure; but if the bird promises well, and you wish to save him, put him in a small place on oat-straw, feed on oatmeal slaked with strong ale, and give him raw eggs to eat. Break the shell in half, and let him have the yolk only. Give him also cooked meat chopped fine. Feed very frequently, and a little at a time.

CROOKED BREASTS (*F. N.*).—We are not responsible for the omissions of the "Standard of Excellence." The crooked breast-bone of your Dorking cockerel may be hereditary, or it may arise from quick growth and narrow perches. It is always a bad sign, and we should not breed from a bird that had it. Where a fast-grown, and consequently weak bird roosts on a narrow perch, it lacks the power to support the body by the clasp of the feet, and from very lassitude the breast rests on the perch. At an early age, being only a gristle, it takes the impress of it.

EGGS LAID AT THE BIRMINGHAM SHOW (*J. L. A.*).—Those who frequent the Birmingham Show cannot fail to have observed the men who go about to collect the eggs. Every one is broken the moment it is seen. It has been attempted to purloin them, but the offenders have always been given into custody.

GAME COCKS (*A Subscriber*).—We can give you no rule for preventing Game cocks fighting. Many have tried it: none have succeeded. It is their nature. They may be separated for a time by the following process:—When two are determined to fight, let two persons take a long rod each, and at the end fasten an empty bag or pillow-case. As soon as the birds are sparring closely, each person must choose one of the two cocks and buffet him well with the empty bag. They will leave off fighting, but the process must be frequently renewed.

VARIETIES RUNNING TOGETHER—PROPORTION OF THE SEXES (*E. M. B. A.*).—Separate your fowls at once. There is no certainty after the new year begins. In breeding for exhibition a cock should not have more than three hens in January. As the weather gets warmer and the days become longer the number may be increased. The disappointment in early eggs is caused by the neglect of this rule.

BANTAMS WITH COCHIN-CHINAS—WHITE COCHIN-CHINAS (*Martyn*).—We speak under correction. We have for many years kept Bantams and Cochin-Chinas together. We have never had the suspicion of any bad results; others will tell you differently. No coloured feather of any hue is admissible in the saddle of a White Cochin cock of any age.

FOWL'S WING CUT—HAMBURGH'S COMBS (*H. C. G.*).—A cut wing is a disqualification. The comb of a Hamburgh must not only be quite upright, but firm on the head.

BARBS AT YORK SHOW.—Your correspondent is labouring under a mistake in writing that my birds were so highly dressed that one of them was nearly blind before leaving the Show. It was merely the effect of cold. The bird's eye had not even been bathed with anything except water. I hope you will oblige me by inserting this, and clear me from what amounts to a charge of cruelty.—E. E. M. ROYDS.

WILTSHIRE MODE OF CURING BACON (*B. B.*).—Directions for an eight-score pig:—Lay the flitches on a long wooden tray, slightly tilted for the brine to run out of a hole made in one corner. In Wiltshire there are always four chines; lay everything in the tray. Allow one stone of salt, one pound of saltpetre, half a pound of bay salt. Mix all in a pan, and rub in at first daily, and after the first week every other day for a month. At the end of that time rub the flitches with bran, and hang them up in a dry kitchen, with a stick placed between them and the wall.—A WILTSHIRE LADY.

POULTRY MARKET.—DECEMBER 31.

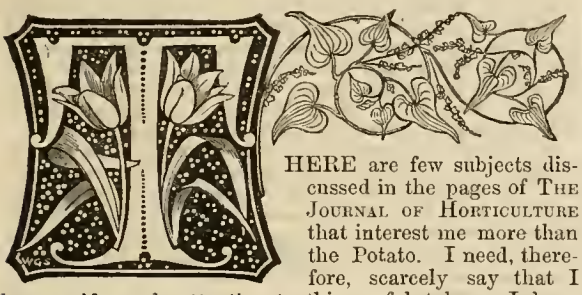
WE have had a curious Christmas market. There was a good supply and a bad demand in the early stages, and things were reversed at last. Turkeys were sold at high prices on Monday and on the Christmas morning. They monopolise all, and other quotations are not to be made. Now, as at other times, one fact remains apparent—that Turkeys are in a measure, and with rare exceptions, subject to the law of meat, and quality being given, the more that they weigh the more they are worth. This rule is good up to 18lbs.; after that they make fancy prices, and over 20 lbs. every pound adds greatly to value.

WEEKLY CALENDAR.

Day of Month	Day of Week	JANUARY 8—14, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
8	Tu	Rhododendron arboreum.	40.9	30.0	35.4	12	7 af 8	7 af 4	4 af 9	6 af 7	2	6 54	8
9	W	Salvia fulgens.	41.3	30.8	36.1	14	6 8	8 4	34 9	12 8	3	7 19	9
10	Th	Ceanothus azureus.	42.0	30.5	36.2	16	6 8	10 4	2 10	20 9	4	7 44	10
11	F	Azaleas.	41.9	30.8	36.3	20	5 8	11 4	28 10	30 10	5	8 8	11
12	S	Fuchsias.	42.5	30.8	36.6	16	4 8	13 4	55 10	41 11	6	8 31	12
13	Sun	1 Sunday after Trinity.	43.0	32.2	37.6	18	4 8	14 4	22 11	morn.	☽	8 54	13
14	M	Primula sinensis.	42.1	29.9	36.0	18	3 8	16 4	52 11	53 0	8	9 16	14

From observations taken near London during the last forty years, the average day temperature of the week is 41.9°; and its night temperature 30.7°. The greatest heat was 54°, on the 9th, 1862; and 12th, 1852; and the lowest cold 6°, on the 8th, 1841 and 1861. The greatest fall of rain was 0.86 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

POTATOES AND THEIR CULTURE.



HERE are few subjects discussed in the pages of The Journal of Horticulture that interest me more than the Potato. I need, therefore, scarcely say that I have paid much attention to this useful tuber. I have read with interest what has been recently written by "D.," of Deal, and Mr. Dobbie, and can corroborate what the former has said about varieties, and what the latter has stated about planting whole sets in preference to cut ones.

Like "D.," of Deal, I consider the Prince of Wales the most worthless Potato imaginable, notwithstanding that it was sent out with the flaming character of being "a boon to the world." Any person who knows a really good Potato would not tolerate it under any circumstances. I also agree with him in considering the Lapstone Kidney the finest in quality of all Potatoes.

I may name, in addition to the five varieties enumerated by "D.," of Deal, the Dalmahoy and American Early, both well-known varieties in Scotland, and first-rate second earlies. They are hardy in constitution, heavy croppers, and excellent in flavour—certainly in all respects not inferior to Daintree's Early.

Ross's Early is an amazing cropper, and of the very best quality, but it requires much room, and is only a third early, eating well all winter.

Myatt's Ash-leaf is with me the heaviest cropper of all the Ash-leaved varieties, and it is fourteen days later than the common old Ash-leaf, yet the best early sort.

The Curly Top, mentioned by Mr. Dobbie, deserves all he has said of it in point of earliness and constitution, but it is a little inclined to be waxy—a great drawback to any Potato.

Touching the chief features in the culture of Potatoes, I have, like Mr. Dobbie, proved over and over again that there is no greater mistake than that of selecting very small sets or of cutting up large Potatoes into many. Any one can put this matter to the test by planting a quarter of Potatoes, beginning at one side, and putting in a row of very small sets, gradually increasing their size in every row till the very largest are planted. It will be found at harvest-time that the small sets give the greatest proportion of small fry, and *vice versâ*, so that when Potatoes are planted whole, medium-sized sets should be chosen. Of the early Kidney varieties I always save sufficient of the very largest tubers I can select, and have ever found them produce the finest crop with the least proportion of small Potatoes unfit for table. The seed should always be saved from the earliest crops, and in garden practice it is a good plan to green them, and store them thinly on shelves in a dry airy place; as soon as they begin to sprout they should be planted the first opportunity.

I consider that the cutting of sets is attended with many evils. The Potato loses much of the sap that should be husbanded. In dry seasons, and particularly in field culture where the ridge system is practised, and the manure ploughed into the centre of the ridge in a dry state, the cut Potato is surrounded with a medium which sucks the sap from it like a sponge, and unless rain set in blanky fields are the result, and the farmer says his Potatoes have taken the "dry rot."

It is not a matter of unfrequent occurrence to see Potatoes first allowed to grow in pits, and then be cut into small pieces, and planted as above; and surely it is a practice which cannot be regarded as anything but most irrational. In garden practice I either plant in soil that has been well manured for the previous crop, or else trench in the manure in autumn, and in doing so mix it well with the whole staple.

One-half the manuring which takes place in field culture I regard as positively mischievous, just because it is generally done in dry weather in April, and when the manure, if not well rotted, becomes dried before it is ridged-in with the plough.

The ridge system itself I look upon as very objectionable on light dry soils. The manure and sets are enclosed in a dry state in an elevated ridge, where the manure when once dry is not easily wetted, and can be of little avail to the crop; indeed, I have seen it turned out in autumn in very much the same state as when it was ridged-in in April. If the sets were planted on the flat instead of in ridges in dry soils it would be the means of producing fine crops, and more especially if the manure were well incorporated with the soil in the previous autumn. The system of grubbing with horse-hoes close to the stems of the crop, loosening the plants about the neck, and, tearing up the stringy roots on which the young tubers are formed, is pernicious in the extreme.

In gardens where the soil is generally rich and deeply worked I think wide planting should be practised. By this means light and air are allowed to play freely about the tops, and the rays of the sun can benefit the soil. For such sorts as Myatt's Ash-leaf, Lapstone, and Daintree's I allow 2 feet 10 inches, and from 12 to 14 inches between the sets; and for larger-topped sorts such as Ross's, 3 feet by 15 inches. I am persuaded that more fine useable tubers are thus produced than when thick planting is practised.

The early varieties, such as the Ash-leaved, may, when planted at such distances, be allowed to grow with two shaws; and the later sorts at the widest distance named sometimes I leave with three without any bad effects. Indeed, if allowed to grow with only one top, such as Ross's Early, are apt to be too large for any purpose, excepting baking whole in their jackets; for this purpose I am required to grow a few of Ross's every year. One season, about three years ago, I took the trouble to weigh twenty-four tubers out of about three barrowloads, and their united weight was 44 lbs., whilst one set reached the enormous

weight of 3¾ lbs. These were sound to the centre, and when baked, came out of their skins sparkling like powdered sugar. They were produced from large Potatoes planted whole and wide, and when turned out the soil looked as if it had been literally paved with Potatoes of enormous size, and there was scarcely a single tuber that could be called small.—D. Thomson.

MAKING VINE BORDERS.

After reading the article by "Vitis" on the construction of Vine borders at page 420 of the last volume, I thought it was really requisite for some one of experience in the matter to make a few remarks as quickly as possible, for what "Vitis" says is calculated to lead people sadly astray, and it is probable that any one about to make Vine borders will be proceeding with the work at once. Therefore, without any apology, I offer the following remarks.

In the first place, I consider it exceedingly presumptuous on the part of "Vitis" to refer to the system proposed by a practical man like Mr. Wills in the jeering way that he does, thus endeavouring to detract from the merit of that method which is not only undeserving of condemnation, but than which, when the exact proportions of the materials are stated, it is impossible to imagine a more correct mode of making a Vine border where the question of expense is no consideration. I do not suppose Mr. Wills for one moment thought his method would meet the requirements of such men as "Vitis." If "Vitis" had politely requested Mr. Wills, stating his means and the object in view, I have no doubt Mr. Wills would have had much pleasure in giving instructions as perfect in their way as the plan which he has already laid down.

With regard to the depth of the border described by Mr. Wills, his provision for airing it and its being composed of such open materials sufficiently remove all objections on that score, especially if it be made 2 feet 6 inches above and the same depth below the ground level, seeing that a foot or 15 inches of the lower portion consists of drainage, so that the layer of turf forming the bottom of the compost will be only 15 inches below the ground level. This, with perfect drainage, will, I am quite satisfied, protect the mass of compost from becoming dank or unhealthy for the roots of the Vines in any part.

I am no advocate for applying bottom heat to Vine borders in the usual way with hot-water pipes, but I cannot see anything but what is right in the way in which Mr. Wills proposes to apply it, the object being merely to keep up a circulation of air around the mass of compost.

After very extensive experience in the formation of Vine borders, I can with confidence strongly recommend Mr. Wills's plan to all who do not mind going to the expense. I am sure Mr. Wills must have bestowed much thought on the subject, and I am sorry he did not make calculations, which I have no doubt he is well able to do, showing the exact proportions of the materials used, as his doing so would have prevented sharp people, who are always ready to point out errors in such a nice way, having the opportunity of doing so. I beg to propose that Mr. Wills shall be allowed to make a chapter of remarks on his own article, to give him an opportunity after more mature deliberation of adding and supplying whatever may be deficient, so as to make it perfectly plain to the most ignorant on the subject. I maintain that the article is a good one, and worth bringing prominently forward so that it may be made perfect.

A few words more respecting the depth of the border. I have found that it is not right to water Vines after the fruit begins to colour, which process lasts about one month, and if the Grapes are wanted entirely for private use it may be a month or two more before the crop is cleared off, during which time the Vines should have no water poured on the roots. As Vines thrive best in very open material, three months, with the shallow borders made entirely inside, and composed of open materials, is too long for the roots to be without water in, it may be, the hottest three months in the year: hence my reason for recommending the deep border, which will retain moisture sufficient for the Vines until water may be applied after the crop is cleared. I would not make the deep border on any account without the provision for airing it.

With regard to the method of making a Vine border described by "Vitis," there is one thing alone in it that in nine cases out of ten would lead to nothing but disappointment and labour in vain. I do not mean to say there would be no Grapes, but in most cases the Vines, if used for early forcing, would be backward at breaking, come on slowly, and at the best be only middling when finished.

How this state of things would be brought about is soon told. The roots of the Vines would go down not only many feet, but yards, out of the influence of the atmosphere, either natural or artificial.

One February I planted some Black Hamburgh Vines, and forced and fruited them the second season. The border was made entirely inside the house on a good floor composed of two layers of bricks grouted in mortar, and was about 3 feet deep. It was composed of fifteen parts of the very best turf from an old pasture, three parts of old lime rubbish, two parts of an excellent quality of sand, as the turf was destitute of sand, but neither heavy nor light, and one part crushed bones, with a little nicely-prepared horse-droppings, just sufficient to make the roots start boldly. It was not hunger that drove the roots from home, yet the Vines during the second season perplexed me sorely, for in many respects they showed indications of their roots having gone down into wrong quarters, which I could scarcely believe to be possible. At the end of the second season the Vines were lifted and removed to another house. I was astonished to find that the roots had found their way through the floor at the bottom, and I traced them 9 feet down below the level of the floor, and then cut them of the thickness of my finger; how much further they went I do not know.

What I want to impress upon the minds of those who are looking out for instructions in the making of Vine borders, is that they should make sure of preventing the roots from rambling away from the prepared border, and how difficult this is to accomplish; and if they are not willing to go to the expense of doing this, to let it alone altogether. I recommend them not to be satisfied with anything less than the following carefully executed.

After the necessary preparations are completed for laying the floor, which should be made before any brickwork connected with the structure is commenced, scrape together in heaps 2 inches of the material forming the bottom, and saturate it with coal tar, which may be procured at a trifling expense from the gas works, if any such exist in the neighbourhood—if not, use another material destructive to the roots of the Vine. Mix the whole well together, let it lie a few days, then spread it all over the bottom again, and upon this place close together a layer of brickbats, or any other material, to the thickness of 3 or 4 inches. The man when putting this down must have a board upon his own work to stand upon; the substance under the layer should be so stiff that it will not ooze up when trodden upon. Next grout the layer all over with mortar so stiff that it will not work up the tar on being spread and brushed about with a broom; then let it remain a few days to dry and harden. The boundary walls and all the walls connected with the structure must have their foundation upon this floor, or if brought from below must have a layer of slates at this level. The boundary walls from the level of the floor must be made so that the roots may have no chance of finding their way through. This may be effected by means of slates put in the middle of the wall, or by leaving a cavity to be filled with a layer of the material used for the bottom of the floor. This may appear to be an unnecessary precaution, but I have found it quite requisite. I have known the roots of Vines go through a floor composed of two layers of bricks, and two brick walls besides, hence my reason for applying something more than ordinary brickwork to secure them, and never in my experience have I lifted Vines without finding that they had wandered away from the prepared border. I do not think Muscats can be grown to perfection without this precaution, but with it, and covering the outside border, they may be fruited as perfectly as the Black Hamburgh—that is, they may be made to produce bunches as full and regular in the berry and finely ripened, the berries being of an enormous size.

"Vitis's" experience of Vine-growing leads him to think that under any circumstances a little drainage is all that is requisite, then again he speaks of the border being trodden upon until it is quite hard. To say the least of it, this is a very loose style of gardening to set before the public.—A Gardener.

At page 481, in your Journal of December 25th, a writer who signs his paper "Forwards" states he has read Mr. Pearson's little book on the Vine, in which he recommends green turf, which he says from many soils would make the worst possible Vine border. I have referred to the work in question, and find the passage stands thus:—"The soil for Vines should be light and porous, and moderately rich, and is better for con-

taining a good quantity of lime. The bulk of it ought to be chopped turf from an old pasture; if neither too sandy nor too heavy, this alone would grow good Grapes. It may be used the day it is cut as advantageously as if kept a year. To ten barrowloads of this turf soil add two of broken oyster-shells, old lime rubbish, or chalk, or a mixture of the three, which is preferable; one of horse-droppings, and half a bushel of broken bones."

Now I would ask, Is the remark of "Forwards" a fair one? Is not the sort of turf soil pretty well indicated in the passage I have quoted from Mr. Pearson's book?—A Lover of Fair Play.

PEAS—QUANTITY OF SEED NEEDED—ESTIMATE OF VARIETIES.

In reply to the question relative to the quantity of Peas sown per acre of kitchen garden; that here is nearly five acres in extent, and there is a large demand for Peas, yet I find 24 quarts ample for the whole season.

Too much cannot be said in favour of Essex Rival and Wonderful. Although Essex Rival is about a week behind Dickson's First and Best in coming in, I depend upon it for large gatherings.

For a first crop I sow in pots in the end of January, harden off, and plant-out the first opportunity, and find the yield to be more than double those from November sowings, and quite as early, to say nothing of the trouble of the latter from mice, &c., and especially from the gardener's feathered friends.

I find the following sorts are as good as any I have tried:—Dickson's First and Best, Essex Rival, Dickson's Favourite, Wonderful, Veitch's Perfection, Hairs' Dwarf Mammoth, and Ne Plus Ultra.—G. E., *Strawberry Hill*.

OUR VINES.

(*Continued from page 6.*)

Through all the winter time, day after day, we looked at our Vines. They were still pale, leafless, unpromising-looking canes, giving no sign of growth, nor even of life. Uncle Tetley peered at them through his spectacles, and papa bought a large magnifier; but yet we could make nothing out. Cousin Herbert took a trowel and turned away the soil from about the Vines. There were lots of little white thread-like roots pushing in all directions; but, then, Cousin Herbert had never seen Vine roots before, and did not know whether they were right or wrong, so I asked George, our gardener, a supposed clever man. "Why, you see, Miss, I never took much notice that way. I am not sure they should be either white or brown, I have seen them both. I don't think it matters much."

February passed, March came—a dry, sunny, blustering month, as much dust in the streets and on the moors as would have ransomed every king in Christendom, our Vines at South Field were out in full leaf; those at Ridge Close had not a leaf to be seen, nor even the least appearance of any swelling of the eyes. "They are dead right out, I am sure," said papa; "I would write to that Bradford man and tell him, if I were you, Herbert;" but Herbert had larger hope and longer patience, so waited on. One morning in the first week of April, a little glistening tear had gathered in the eyes of several of the Vines, and during the same day the had-been-owner walked in.

"What! Your Vines in this state yet?" He took up a syringe and doused them over and over again. It was a regular thunder-storm inside, with heavy rain. How it did run down the glass, carrying with it a good many Yorkshire blacks we did not know to be there. Certainly it was a cleansing operation. Kate timidly suggested the idea of drowning, but he only syringed away the harder, saying, "Do you not know I pledged myself for the success of these Vines? and unless you wish me to fail you will not let them die of thirst. Tell your brother to syringe them night and morning, and during the day while the dry sunny weather lasts, and to water them once a-week, giving them at least three gallons each." Then he took up a watering-can and emptied the cistern that always stood full in the vinery.

After this the Vines grew apace, Cousin Herbert syringing them every morning before he went to his office, and in the evening when he returned, and Kate looking after them during the day. There was no doubt they had wanted water, for in the moist atmosphere they grew amazingly, leaf after leaf unfolding itself in the warm April sunshine. Soft delicate leaves they were, and very beautiful.

One morning going into the vinery we found several of the leaves on the Lady Downe's Vine and one Muscat Hamburgh eaten by some insect, nearly all the young leaves were more or less disfigured; perfectly round holes they were, as if they had been cut out with an instrument. Cousin Herbert said "We must see after it, for the Vines would be injured if not destroyed; if the leaves went wrong the roots would follow, for the leaves are the great root-feeders." Uncle Tetley always laughs at this theory, and calls it absurd, and says, "There never yet were and there never can be leaves without roots." So Kate and I spent much time seeking for something that could have done the mischief. Aunt Margaret thought it was a caterpillar. No one seemed to share her opinion. Janet said, "The likeliest thing was an earwig," but then it was too early in the season for those little, lazy, comfort-loving pests to have become troublesome, and in all our search we never met with one. I said, "Might it not be a snail or slug?" "Oh, no!" said Kate, very wisely, "it cannot be that, for the little molluscs never make those clear ring-like holes, they are much too greedy, they eat on straight before them until leaf, or flower, or whatever they have attacked is done with, unless they meet a midrib or dry stem which proves harder than they like. Besides, they would have gone to the Ferns at our feet in preference to making a long uphill journey for very doubtful food." Cousin Walter said, "It might be the crickets," with which our vinery was already sadly infested. "That cannot be," said Janet, "for crickets are anti-vegetarians."

So the search went on day after day, and the wonder whatever it could be agitated the two households in no small degree. Even Aunt Margaret shared in the search, and came in conqueror after Kate and I had spent a weary time, and Cousin Herbert pounds of paraffin composites, for the evening was his only spare time, and he would not use our farthing rushlights. Yes, Aunt Margaret came in one day with a little cinnamon-brown beetle stuck at the point of her darning-needle, looking hard at it as if afraid it would escape. "Is this the gentleman you are seeking?" said Aunt Margaret. "A clever fellow he is to hide away just on the very bit of Vine bark nearest to his own colour. I tell you what, Kate, with all your cleverness and your quick eye for shade and colour, you could not match yourself like this."

"Clever do you call it, Aunt Margaret?" said Kate, "I call it the Divine instinct of self-preservation."

"Well! well!" said Aunt Margaret.

"It is all chance," said Janet, "you might just as well have found it anywhere else—across the way on Maud's Dendrobium nobile, for instance." Janet's book-learning and French reading had made her rather sceptical about what she called simple things.

"I do not think it looks like an insect to eat Vine leaves," said mamma, who was at Ridge Close at the time, and who is a great lover of those little hard-backed fellows.

"Then, pray," said Cousin Herbert, "what was he doing up there? In truth, I searched the leaves under and over, but never once thought of the canes. You deserve a gold medal for your success, Aunt Margaret."

Then the poor little beetle was put under the magnifier and subjected to close observation. If he had any shyness about him he must have been greatly troubled. Some one wanted to keep it as a specimen for future use, but Aunt Margaret coolly put it in the fire, saying she was a member of the "Humane Society, and, doubtless, it was suffering from the prick of her needle." After this we found several; they were always hiding away on the bark, on the shady side of the cane. Whenever a new hole was seen then fresh search was made until they were fairly exterminated.

Through all the long summer days, and the shortening ones of autumn, the Vines grew and flourished. How much we thought of them! How proud we were of them! If they had been chickens, or children, they would have been spoiled right out with over-kindness or over-praise. Everybody admired them. They shot right out straight as an arrow, as if aiming to reach at one-year's spell the light graceful roof. Uncle Tetley used to go round the vinery nearly every day, and slacken the strings which tied up the Vines to some little brass hooks Cousin Herbert had put in by the sides of the windows for that purpose, saying as he did so, "The poor things must have room to grow." I have a fancy Cousin Herbert used to tighten them many a time to keep them up in their proper place. However, the canes did thicken fast, almost past belief.

Far into November the leaves were fresh and green, growing on still. Cousin Herbert became uneasy, "It could not be right," he said, "they ought to be going to rest as all the Vines in the houses about were. Papa sent George in to look at them and hear what he thought; but George came back a Job's comforter. "Ah, well!" he said, "they have grown much too fast. Such soft, hollow, fuzzy canes will never ripen to bear fruit, whatever Mr. Herbert may say, or his fine gentleman gardener. I know better than that, a bit of practice is worth a deal of theory."

Soon after this some frosty nights came and the leaves changed rapidly. Bright golden leaves they were, speckled over with brown, and they tumbled down in all directions, dust-dry withered things. Then, in December, Cousin Herbert bought a new knife to cut back the canes. It was quite an affair; we formed a procession to the vinery to see the operation. "They are easy enough to cut," said Cousin Herbert, when high up the ladder, "did not need a new knife for the operation." I begin to think, After all George is right, they are a bit soft and fuzzy.

"They are no such thing," said papa, who always sticks up for the Vines against everything and everybody. "Why, look here, at these good thick buds, I should not wonder but you may have fruit next year."

"Yes, if our Vine doctor will let us," said Kate, "but he says they ought not in justice to the plants."

"I would take no notice about what he says," said papa.

"To be sure not," said Cousin Walter, "take the gifts the gods send, and not wait for the years that may never be."

"I rather think your Vine doctor, as you call him, will have his own way, in spite of all you can do or say," said Aunt Margaret, "and I would not injure my Vines for the sake of one year's waiting. Some of us may live to see the fruiting years if Walter do not."

Cousin Herbert had a sorry time of it up the ladder, one wanting them to be cut shorter, another to be left longer; but in and out among the canes his knife went, and the work was soon done.

So the Vines were once more at rest; the canes were thicker and darker, the little brown beetle would have to get himself a darker coat if he wished to escape observation as easily as before; and the buds were large and plump and full of promise. Throughout the month of February we could see the sign of coming growth, the hidden life ready to burst forth when the spring sunshine called it. March they were out in full leaf, growing vigorously—nay, madly growing, as the Willow grows by the waterside, as if all life meant so much cane and leaf, and nothing more. Such monster leaves George could not find on our South Field Vines. He said he "was glad he could not, for coarse leaves would lead to coarse fruit."

In this second year we did not forget the syringing process, and tried our best to keep the house at a proper and increasing temperature. Several bunches of incipient bloom made their appearance to our infinite delight, but as the weeks passed the bloom did not open, but twirled and twisted itself up into tendrils. We pulled it down, even made little cotton bags and put in stones and bits of bricks and hung them up to the bunches to keep them straight, but they still twirled and twisted and would have their own way.

"Why, there would have been blossom, Miss," said George, only Mr. Herbert has washed it all away. Vines should never be wet after they come into leaf."

One day the Vine doctor, as we call him, came in. "I have been into your house," he said, "and looked round. Your Vines are in first-rate condition. I have cut them back properly and stopped the laterals. They will go on now famously. It should have been done before, but I could not get over sooner."

"I suppose they are bleeding, then," said Kate.

"Well, perhaps you had better take in some basins, or dishes, or something; it is a pity anything should be wasted; and yet it will do them no harm, they are in such rude health they can bear a trifle with impunity. I would cease syringing for the present if I were you, they grow fast enough."

When we went into the vinery and found the floor and shelves covered with leaves, and shoots, and laterals, we gave a great cry of horror. We thought surely ruin had come and no mistake, and asked in dismay, "Where would be the roots which all these leaves would have made?"

"Never you mind the philosophy of the roots; but look here, these are the leaves to take care of, for they feed the buds for next year's bloom; they must not be injured or broken off by any means. If you want Vine leaves, take some of those high up belonging to the eyes that will be cut away. It is better, though, to let them alone. Next year you will have fruit, I hope."

Although we told all this to Uncle Tetley, he laughed and would not believe, and a few days after a lady came begging Vine leaves to put about her French Grapes, a sort of make-believe they were English. What does Uncle Tetley do but invite her in to choose. So she, of course, all unknowing, chooses the lowest down, easiest to get, and the largest. Poor Kate declared boldly he must not take those, but one, two, were already gone. By main force—half play, half earnest—we held him back, Janet scolding all the time, asking what right we had to interfere to prevent her father from breaking off any leaves he might fancy—all of them, if it would give him pleasure. He was surely worth more than all the Vines in the world. "If I were you, papa, I would take what I wanted, they are all your own."

"They are not," I said sharply, "they are our Vines, and Uncle Tetley never calls them his."

Uncle only laughed, and the visitor declared she would much rather have a few small leaves if they could be reached. Though she said so, I am afraid she went away with her handful of leaves which our young Vines could ill spare, thinking us shabby, niggardly creatures.

So on into the summer months we went all prosperous, and yet we were not quite safe through the wood; for during August several of the leaves on two of the Black Hamburghs assumed a strange appearance, the edges of the leaves curling in as if to hide the stems; and the leaves when broken off and examined were scabbed and blistered, as if the green liquid which fills the little cells had flooded over, and in some evil hour broken up the light tissue boundaries. What could it be? what had caused it? were questions asked continually. We turned to the gardening books which had been pored over beforetimes without number, and soon found a name for the disease, its cause and prevention. But, oh! those warted leaves, how beautiful they were when seen through a magnifier! What a marvellous world each seemed to hold in its hollow! What glorious mountains covered with green moss and scarlet Lichens, the very stones among which seemed to sparkle like diamonds! and then such soft deep-sheltered vallies as to live in would be Paradise. Where the scabbed edge had been broken there seemed to rise up immense rocks, pile upon pile, and beyond these stretched long weary green plains, over which a feeble spider moved, like one of those huge, clumsy, extinct animals of the era before man was.

"Never mind fretting about it, Herbert," said Aunt Margaret one day, "it's my opinion Vines are like little children; there are so many diseases they are liable to, which they must have if they are ever to grow up. It's only their measles or chicken-pox period; they will be all the better when they get through it."

"Then after all we may sit under our own Vine and Fig tree, and hope to eat the fruit of our own growing," said Cousin Herbert one evening in autumn, as we lingered in the vinery. The rich sunset was tinging the dark leaves of an old Sycamore tree, and a silver-barked Birch was swaying to and fro, making long graceful shadows on the grass beneath.

"I wonder," said Kate, "if we should ever grow rich and great, and be forced to keep gardeners, if we should have as much enjoyment in proportion as we have in this little place."

"No, indeed, you would not; you are too independent, and like your own way too much, Kate, and you know too much. No, you would feel very like renting your own property, or living by sufferance in the house you had mortgaged," said Cousin Herbert.

"I think there would be a great deal more pleasure and comfort, certainly less labour," said Janet.

"I think there would be less idle time," said Aunt Margaret. "Ah, girls! you waste a great deal of precious time. When I was young, people never sat as you do, with folded hands doing nothing; they even took out their work with them when they went visiting."

"Then, I think, dear Aunt, we must be living in the reaction period," I said, "and yet all rest, all folding of the hands is not idleness."

"Perhaps," said Kate, "we work harder when we do work, and so get through more. At any rate, they say life's pulses beat faster than of old."

"Then why do you work so hard," said Janet, "and at a man's work, too?"

"Because I like it," said Kate, "and certainly it is not more

a man's work than a woman's. I think, indeed, it is the world's great plot of neutral ground belonging to all who have skill, or taste, or strength, to work in it, and all may work in it on a level, for the necessary outlay is small, it needs no costly tools. I often wonder dear Bessie Parkes never tried it as a good, a pleasant, and a remunerative employment. To be sure the Latin names might be hard to learn; but then many women have learnt harder things."

"And very fine they would look out in the rain and puddle planting monster trees they could not carry," said Janet.

"Well, I suppose few women live beyond the reach of a man's stronger arm, and help could always be procured to do what women were unable or unwilling to perform for themselves," said Kate.

So the autumn and the winter came again, the leaves all fell from the Vines; they were once more at rest. All rubbish was carried away, the house was smoked, well swept down, and our fire-maiden came in with hot water, soap, and brush, to "clean out the place," as she called it. How she laughed and sang at her work, called it her holiday, and how clean and fresh she made it, and the only extra cost to us was a new print dress for the one cook said she "had spoiled doing new-fangled work."—Maud.

(To be continued.)

THE GLADIOLUS IN POOR SOIL.

Being a great admirer of that beautiful flower the Gladiolus, I beg to state, in support of the opinion of some growers, that this flower does exceedingly well with me in very poor soil, very little better than brick-rubbish, and the atmosphere is not very good, the place being only one mile from London Bridge. I mention these facts for the encouragement of those who may think soil and situation may not suit this flower.

I have had spikes equal to those I saw this season at the Crystal Palace; they have been admired by experienced gardeners.—William Edwards, *Bermondsey*.

A VISIT TO TOWERVILLE, HELENSBURGH.

At this season (October), when the shadow of approaching winter is beginning to fall on the parterres and flower-borders, the lover of floral beauty can still find under glass much of the brilliance of summer, and even some of the first freshness of spring. On the afternoon of the 16th was gathered and arranged what it was feared would be the last bouquet of out-door flowers for the season. It was for an invalid lady friend in London, who would appreciate the gift all the more that it came from her natal district. It seemed to be the finest of the many which had been gathered and arranged in the course of the season. Next morning the hoar frost lay thick on plant, and flower, and grass, and at a glance it was evident that, in as far as the more tender specimens were concerned, my worst fears had been realised. Cast down though for the moment I unquestionably was, the thought that I was that day to pay a long-promised visit to a very dear friend, one of the most enthusiastic and successful amateur horticulturists of my acquaintance, dispelled the rising gloom, and made me forget the grudge I owed John Frost for coming on so very soon.

The day was not far advanced when I started. Glasgow was soon reached, and then by rail to Helensburgh—one of the most sunshiny seaside towns in the west of Scotland. The sun was bright overhead, but a misty veil hung over the Frith of Clyde, and shut out from view one of the most glorious panoramas on which the eye can rest, and which, if equalled, is certainly not surpassed. Arrived at our terminus, I hurried on to Towerville, along pleasant streets, skirted on either hand with villas and villa gardens, and, after a ten-minutes walk, arrived at the private entrance.

The first object that attracted attention was the flag which my hospitable friend had raised in expectation of my arrival, and which the morning breeze flung out from its folds with a force that made the strong flagstaff bend like a Willow sapling. Next the villa came in view, enlarged since my last visit; but so skilfully had the architect adapted the addition to the original building, that even a practised eye would fail to detect what recollection alone informed me of—that its parts had been planned and erected at different times. As it now stands it is, both internally and externally, a very model of its kind, and, while neither imposing from its size nor pretentious in its style, it gives one that idea of elegance and comfort which we deem essential to a seaside summer residence.

Another turn in the road brings the owner in view. He is leaning on a gentleman's arm, for, unfortunately, Mr. Henderson has been for the last eight months an invalid, set aside from any active share in the business of the important and influential firm of which he is a partner; but here his love of flowers and plants has served him in good stead, occupying without fatiguing his mind, affording healthful recreation, giving a present enjoyment, and leading heart and mind "from Nature up to Nature's God." As a man of business, as an enlightened patriot, as a warm-hearted friend, he has gained a name both in this country and in Italy, where he is even better known; and if it be the will of Providence that "a youth of labour" should be followed by an "age of ease," amid such scenes as those by which he is surrounded, I am persuaded that, even as he has no occasion, so he will not be found to complain.

The first cordial welcome over, and a slight repast disposed of, we are once more on the gravel on our way to see the latest novelties and improvements.

The lawn, with its adjoining terraces, stretches away eastwards from the villa. It is sufficiently extensive to admit of the introduction, without confusion, of a large number of our rarer Conifers and evergreens. All along the main approach, on the right hand there is a row of Cedrus deodara, while on the left hand these are admirably balanced with large Portugal Laurels, in the intervals between which rise deciduous trees in great variety, and a fine effect is thus produced. Among others were fine specimens of Wellingtonia gigantea, Cupressus macrocarpa, and C. Lawsoniana. One feature in the decoration of the lawn is quite unique in this part, but is easily accounted for by Mr. Henderson's long residence in Italy. Here and there, partially hidden by the evergreens, or skirting the line of walk, or forming the terminating point in some pleasing vista, are beautiful marble statues, copies of well-known works, and although, assuredly, we have not the warm, dry climate which some regard as essential to this kind of ornamentation, still the effect on the day of my visit was charming; and after the eye became accustomed to their presence I would not on any account have dispensed with them.

The great attractions of Towerville, however, are under glass. Adjoining the house is a small conservatory, in which a matchless collection of tree Ferns have their temporary abode. The larger number are specimens (some of them 10 and 12 feet high), of Cyathea dealbata, the fronds of which are already 5 feet long, and yet only one-half of their original size when they were dug up in their native habitat. The tallies attached to these splendid plants tell a marvellous tale. They inform us that in the beginning of this year (1866), they were growing in the depths of a New Zealand primæval forest; and now, after the lapse of only eight or nine months, they are throwing out their graceful fronds in every direction, overarching the on-looker with their silver tracery. What care must have been bestowed on them in their transit from the Antipodes! and what skilful treatment by Mr. Henderson and his clever painstaking gardener before a result so satisfactory could have been realised! A new house is being planned by Mr. Clark, of the Glasgow Botanic Gardens, for the reception of this interesting collection of valuable plants.

A few steps from the small conservatory is the Orchid-house—a spacious building, with a passage all round, so wide that it is obvious that the comfort of the ladies of the household has in this been consulted. The impression produced on entering this house is one not likely to be soon effaced. In front you have a tiny sheet of water, on which the huge leaves of the Victoria regia are floating as healthily as if on the surface of a Guiana lagoon, and in which some gold fish are glancing like flashes of fire. Overlooking the little lake, as if the *genius loci*, is a statue—a beautifully executed copy of the famous Nina del' Arno, surrounded on all sides by foliage of the richest colours and the rarest forms. Overhead a Banana (Musa Cavendishii), showing unmistakeable signs of fruit, shoots upward to the lofty roof its broad leaves, some gradually unrolling. The effect of the central row of plants, including another Banana (Musa textilis), is very fine, and is greatly heightened by the splendid specimens in front, by which their stems are concealed. Among these may be particularly noticed Cissus discolor (7 feet high), Maranta zebrina (4 feet high and 7 feet in diameter), Alocasia zebrina, and Alocasia metallica. Interspersed are large plants of Golden and Silver Ferns, such as are seldom seen elsewhere, and at least

one magnificent specimen of Adiantum cuneatum, for which I confess a special fondness. Between the pathway and the sides of the house a bench runs all round covered with plants, and over them, depending from the roof in wire baskets and on wooden matrices, you have Orchids in endless variety; the odd shape of the flower in one case, the rich colours in another, and the powerful perfume in a third, compelling you to pause and admire. Not a foot of space in this large house is lost, and yet the arrangement is so perfect, that when at the farther end you meet with a lovely copy of the Venus de Medici, you are satisfied that her presence there is in thorough keeping with the whole.

Attached to the larger building is a smaller one, in which the temperature is lower, and where another class of Ferns and Orchids is under cultivation. Here you may rest on the sofa and admire the wall over against you, clad with Moss and covered with graceful Ferns, which are retained in their position by ornamental wirework; on turning your eye to the right you may see reflected in the large mirror which forms the outlet the whole passage along which you have come, with its verdant and variegated fringework—

> "So wondrous fair, the whole might seem
> The scenery of a fairy dream."

Space will not permit me to speak of the greenhouse, or vinery and Peach-house, in the former of which are many rare and beautiful plants. My object is so far served, in showing what men of means and taste may do to provide an endless source of instruction and enjoyment for themselves and their friends, and in paying a just tribute to one who has used with such industry and liberality the advantages and facilities which, as an extensive shipowner, he enjoys for introducing new plants and splendid specimens of known species to our land, in which the disadvantages of climate can be overcome by the aid of art.—J. R. A.

CURRANT CULTIVATION.

The Currant is one of our most useful hardy fruits,and may be grown to perfection as well in the gardens of peasants as in those of the wealthy. Under ordinary circumstances it will be ripe by the early part of July, and by careful protection from the depredations of birds the Red varieties may be had in use until the end of October.

Although I venture to offer a few cultural remarks on this useful fruit, I do not by any means wish it to be understood that I anticipate offering any new suggestion, or writing anything not well known to the majority of gentlemen's gardeners; but I write for the amateur.

Whatever mode of pruning the Red and White Currants may be adopted, they require to be regularly pruned every year. In rearing young trees various methods may be practised, but the easiest and most general is by cuttings.

In raising trees from cuttings the first object to be attained is a clear stem about 6 or 8 inches high, and free from suckers. The cuttings are procured from the growth of the previous year, and for them the strongest, straightest, and best-ripened shoots should be chosen. All the buds on the portion to be inserted in the ground should be carefully picked out, leaving three or four of the terminal ones, and reducing the cutting to about a foot in length by taking off the unripened points. By removing the buds, or eyes, the trees are prevented from throwing up suckers, which are injurious, besides being unsightly and troublesome to displace. The cuttings may be planted in a shady situation in rows about 18 inches apart, and about 9 or 10 inches asunder in the row. They will generally in the first season produce about three shoots each, all of which may be allowed to grow during the summer, in order to assist in the production of roots. If it is intended that the trees shall be grown in the open quarters in the usual bush form—open in the centre, then when the leaves have fallen in the autumn, two out of the three may be cut away, leaving the third, the most upright, for the future stem, and shortening it down to about three buds; the lowest bud below the cut must be about 8 inches above the ground. Three shoots will usually be produced in the following year, and in the autumn the trees will be ready for their final planting.

Any common garden soil will suit the Currant, and it will grow freely and bear abundantly either in an open or a shady situation; but to insure good fruit the ground should be well cultivated, and, previous to planting, be trenched to the depth of 2 feet. While they will grow in almost any soil, Currant trees delight in a strong loam, and will there produce best, but on a sandy soil the crop will come in rather earlier. The time of planting will be from the fall of the leaf to the beginning of March, but to insure success they should be planted in October.

When the trees are planted the roots should be nicely and carefully spread out in a horizontal position, and the shoots may be reduced one-third of their length, taking care to cut to a bud pointing outwards. We have now a tree with a stem 8 inches high, and three branches diverging from it. Several shoots will be produced in the following season; but two should be encouraged on each branch, the rest being shortened to within one or two buds, or an inch of their base. The six shoots left will form the framework of the future tree, and should be again shortened to two-thirds of their length, or about 9 inches. On these other branches may be encouraged from near their base, and at a regular distance from each other of 6 or 8 inches at their extremities, and confining the head to the height of 4½ or 5 feet. When the trees are thus formed, by allowing the requisite number of branches to rise at regular distances from each other, they will require every winter the laterals or side branches produced in the previous year to be cut back to one or two eyes, around which a number of little fruit-spurs will be formed; and the leaders having attained the desired height must be cut to within two or three buds of their base.

There are some people who recommend summer pruning for bush Currant trees. Where trees are strong and luxuriant, producing a mass of watery spray, crowding the centre of the bush, this may be removed in June to admit sun and air—agents essential for perfecting the growth and flavour of the fruit. All the root-suckers may be twisted off. I may here observe that if there be no more shoots retained than will be necessary to remain at the winter pruning, the next season the tree will in consequence be less vigorous, for more leaves are encouraged, or more of the respiratory organs of the plant; and in proportion to these so will the roots be, and the more roots the more vigorous the tree.

Besides being planted in the open borders, Currant trees may be trained against a wall. For this purpose they may be planted 3 or 4 feet apart. In training wall trees two branches should be taken, right and left, in a horizontal direction, about 6 or 8 inches from the bottom of the wall. From these, upright shoots should rise at about 8 inches from each other. As these grow upwards the leaders will require shortening, according to their strength, to encourage the formation of fruit-spurs. The laterals must be shortened-in in June, and at the winter pruning should be cut nearly close to the old wood. Many other modes of training may be adopted, according to the inclination of the cultivator; but the same system of pruning may be invariably pursued—namely, spurring-in the laterals and shortening the leading shoots.

My remarks have hitherto been applicable to the Red and White Currants; the system of pruning to be followed with the Black Currant must be somewhat different. The Red and White Currants bear the fruit both on the young wood of one, two, or three years' growth, and on the older branches, from small snags and spurs on the sides of these, and which often continue fruitful for several years. The Black Currant bears chiefly on the wood of the preceding year; also from spurs, which, however, are less abundant and smaller in size than on the Red and White Currants. In pruning very little shortening is required. The chief thing to be done is, when the branches are too crowded, to thin them out, or to shorten back any that are becoming too high. No two shoots should be allowed to touch each other, and all cross branches must be cut clean away. The fruit is disliked by some people, and never brought on the table for dessert. It is used in tarts and puddings, and made into jellies, wines, and preserves.—Quintin Read, *Port Hill Gardens.*

GRAPES IN A COOL HOUSE FOR MARKET.

After many years of plodding industry my friend has accomplished his purpose. By the labour of his hands he has built himself a home. His plot of garden he has walled round, and in the enclosure he is about completing a vinery. His aim has been to obtain abundance of light and ventilation. He has succeeded admirably. The house is a lean-to, the back wall 18 feet high, length of rafter 18 feet, length of house upwards of 80 feet. He purposes planting twenty-seven Vines of a sort or sorts which will produce by sale the best returns.

On this point he asks my advice, and so anxious am I that he shall be advised in the best possible manner, that undeterred by any false pride as a gardener, I appeal to you, and should be greatly obliged if in an early impression you would name the kinds you consider most suitable; and what would you advise to be planted on the back wall? It is not intended to use much fire heat, but an apparatus is fixed in case it is required.—Yorkshireman.

[In such a house we would plant only Black Hamburghs. They are good croppers, and find a ready market. With the Vines at something like 3 feet apart, it would be useless planting much against the back wall. If the house is wide, perhaps it would be as well to plant Vines there, but they could not be expected to bear much until they reached the roof, after the front Vines were established.]

PEAR CULTURE.

(*Continued from Vol. XI., page* 461.)

2nd.—WALLS AND ESPALIERS.

Pear trees trained on walls with a few exceptions produce the finest, largest, and best-flavoured fruit. To have some kinds in perfection it is necessary to grow them against a wall, especially in cold, wet, exposed situations.

Selections of the best varieties for wall culture according to my experience and taste are—

THIRTY-SIX.

Doyenné d'Eté	Williams's Bon Chrêtien	Glou Morçeau
Jargonelle	Louise Bonne of Jersey	Forelle
Beurré d'Amanlis	Hacon's Incomparable	Jean de Witte
Gansel's Bergamot	Althorp Crasanne	Winter Nelis
Brown Beurre	Beurré Diel	Knight's Monarch
Thompson's	Joséphine de Malines	Napoleon
Seckle	Passe Colmar	Beurré d'Aremberg
Suffolk Thorn	Comte de Lamy	Beurré de Rance
Urbaniste	Van Mons Leon Leclerc	Ne Plus Meuris
Flemish Beauty	Beurré Bosc	Chaumontel
Figue de Naples	Duchesse d'Angoulême	Easter Beurré
Marie Louise	Bergamotte d'Esperen	St. Germain

Kitchen.—Uvedale's St. Germain.

TWENTY-FOUR.

Doyenné d'Eté	Hacon's Incomparable	Beurré Diel
Jargonelle	Williams's Bon Chrêtien	Forelle
Beurré d'Amanlis	Marie Louise	Passe Colmar
Gansel's Bergamot	Van Mons Léon Leclerc	Glou Morçeau
Brown Beurre	Joséphine de Malines	Winter Nelis
Louise Bonne	Bergamotte d'Esperen	Knight's Monarch
Thompson's	Flemish Beauty	Beurré de Rance
Seckle	Althorp Crasanne	Ne Plus Meuris

TWELVE.

Jargonelle	Van Mons Léon Leclerc	Glou Morçeau
Gansel's Bergamot	Williams's Bon Chrêtien	Winter Nelis
Louise Bonne	Beurré Diel	Beurré de Rance
Marie Louise	Forelle	Ne Plus Meuris

SIX.

Marie Louise	Beurré d'Amanlis	Glou Morçeau
Winter Nelis	Beurré Diel	Beurre de Rance

THREE.

Marie Louise	Joséphine de Malines	Winter Nelis

THREE FOR SIZE.

Marie Louise	Beurré de Rance	Beurré Diel

FOR ESPALIERS.

Doyenné d'Eté	*Beurré Diel	Comte de Lamy
Jargonelle	*Forelle	*Beurré Bosc
Beurré d'Amanlis	*Passe Colmar	*Glou Morçeau
*Gansel's Bergamot	Williams's Bon Chrêtien	Jean de Witte
Thompson's	Louise Bonne of Jersey	*Winter Nelis
Seckle	*Hacon's Incomparable	*Knight's Monarch
Suffolk Thorn	*Van Mons Léon Leclerc	*Napoleon
Urbaniste	*Duchesse d'Angoulême	*Beurré d'Aremberg
Flemish Beauty	*Joséphine de Malines	*Beurré de Rance
Figue de Naples	*Bergamotte d'Esperen	*Ne Plus Meuris
*Marie Louise	Beurré de Capiaumont	*Easter Beurré
Althorp Crasanne		

Those marked with an asterisk require a wall in cold, wet, exposed situations.

A wall for the cultivation of Pears ought to be 12 feet high, and not less than 10 feet. If under 9 feet high there is little chance of a crop unless root-pruning be frequently practised.

I have come to the conclusion, 1st, That if trees are wanted to occupy but a small space they must be on the Quince; and to have them fruitful root-pruning, or rather lifting, should be commenced with the planting of the tree, and continued biennially or triennially until the energy of the wood growth of the tree be subdued. 2nd, That to have the Pear on the Pear stock fruitful and healthy, space must be afforded sufficient to allow the tree to develope itself in its full proportions. 3rd, That root-pruning and frequently pruning, pinching, and stopping, though they favour fruitfulness, cause premature death.

From the above it will be seen that I am an advocate for plenty of room. I find Pears like it. They are fruitful or barren in proportion. The distance apart which I would recommend for Pears on the Pear stock against a 12-feet wall is 30 feet; on one of 11 feet, 33 feet; and upon a 10-feet wall, 36 feet. However high the wall, I would not plant the trees less than 30 feet apart. I have a Marie Louise upon a 20-feet wall, covering a space of 36 feet by 20, or 720 superficial feet of wall, which is no more than sufficient, and yet very little pinching is required. The tree produces fruit much finer in size, colour, and flavour than those afforded by trees occupying much less space. It is the same with trees of Glou Morçeau, Forelle, and other varieties. For low walls, or those from 7 to 10 feet high, trees upon the Quince stock are alone suitable; and they should be planted 12 feet apart on a nine-feet wall, 15 feet upon an eight-feet one, and 18 feet apart upon a seven-feet wall. If root-pruned 3 feet less distance should be allowed.

The above distances are for trees fan or horizontal-trained; but for upright training on the Pear stock, after which fashion trees are sometimes grown for covering high walls, I would allow 6 feet apart. Upright-trained Pear trees on the Quince may be 4 feet apart on a 12-feet, and 6 feet apart on a 10-feet wall.

For espaliers, when there are six side branches the trees may be 24 feet apart on the Pear stock, and 15 feet apart on the Quince, allowing 2 feet more distance between the trees for every less number of side branches.

It is to be understood that all the distances named are for trees planted in good Pear ground, for if the soil be poor the trees will not be nearly so vigorous, and they may be kept fruitful upon a less extent of wall. The same remarks apply where the soil is shallow and hot. In a poor light soil horizontal-trained trees may be planted 18 feet apart if trained on a 12-feet wall; and where the soil is of a medium texture 24 feet will be a suitable distance. For espaliers the distance may be lessened to the extent of 3 feet between each tree.

A west aspect is the best for Pears, and for the hardier kinds a north-west aspect answers tolerably well in the southern counties; but in the northern ones not only is a west wall necessary for the hardier varieties, but a wall with a south-west aspect is requisite in order to have certain Pears in perfection. In elevated and exposed situations nothing short of a west wall is suitable, and a south-west aspect would in many cases be preferable. It is worthy of note that the hotter the aspect the finer the fruit will be in respect to size and appearance, but these properties are very often no criterion of the real merits of a Pear. A Pear should not only have a smooth skin, be large and well-coloured, but be melting, juicy, and of fine flavour. These characteristics are not generally combined, for the fruit from trees on hot walls (not flued), are large and well-coloured, but are woody and juiceless, and have less flavour than those grown on bushes and pyramids. The fruit from the last, where the climate is suitable, is invariably the most melting, juicy, and high-flavoured.—G. Abbey.

(To be continued.)

WINTER PROTECTION FOR CELERY.

There are few places where Celery is not in great demand at almost all seasons, and much time and labour are required to produce first-rate crops of it. From the first handling of the tender seedling in early spring to the protecting time in autumn, considerable attention is required from the cultivator. It is not, however, my intention in the present short article to advance anything on a subject already so well known as the cultivation of this plant, but merely to put forward a plea for the better protection of a crop that may cost us some trouble, and it may be even anxiety, as I have known more than one employer fond of having large and fine Celery, who would be so dissatisfied in the event of its failure that the gardener was no longer secure in his situation.

After Celery has finished growing and been finally earthed up, it is in danger of decay, and no time should be lost in excluding from it heavy rains, or even slight frosts, either of which are the first death-blow to the heads. This is only found out when the digging-up takes place, when invariably out of every dozen one-third is found good for little. This is fre-

quently the case with the later part of the crop, more particularly in heavy, damp soils, and where the quantity grown being large it is impracticable to take it up and store it away.

The usual materials employed in the protection of Celery are fern, straw, or litter of any sort; but all of these are insufficient to resist such drenching rains as we have experienced during the past autumn. The natural growth of the plant is certainly above ground; the consequence is when it is treated artificially, by being buried root and stem, it is more liable to decay if not properly protected from an excess of wet.

The way we manage to save all our crop, let the weather be what it may, is as follows; the expense is rather considerable at first, but eventually a great saving is effected:—A quantity of old sailcloth was purchased at a sale, and it was cut into strips wide enough to form a kind of arch over the plants in the rows. A few stakes driven in between the plants along the row, with a strip of wood nailed over the top of the stakes, are sufficient to support the cloth. Pegs stuck in at each side of the ridge, a little below where the edge of the cloth reaches, and some strings attached to the cloth, will secure it from high winds. The cloth has a coating of tar, which enables it to resist the heaviest rain, as well as a severe frost, without in the least interfering with the foliage of the plants. After the rain or frost has passed away the covering can be taken off with little trouble.

If the above material is not to be had, old doors or sashes placed on each side of the ridge and the side edges brought to meet over the plants, will answer the purpose much better than the littering system. A free circulation of air around the foliage is necessary when the weather will permit. This is not obtained if the plants are almost covered with litter on the first appearance of frost, and the litter perhaps only removed as the Celery may be required.—W. C., *Boughton, Staplehurst.*

MATHIOLA BICORNIS.

We think you should call attention to this very acceptable addition to our annual flowers grown for their perfume. We can fully endorse all that Messrs. Backhouse said of it when they sent it out, which is saying a great deal now-a-days, when we see but few of the so-called "novelties" figuring a second year in flower-seed catalogues. Its only drawback is that the flowers are closed in the daytime; but we intend to try it mixed with Phlox Drummondi, Petunias, or some annuals of like growth this year, which will give the beds a pleasing appearance by day. Like most of its tribe it was vigorously attacked by slugs and snails, and doubtless in many places it never was seen after sowing.

The following is Messrs. Backhouses' description, slightly abbreviated, and we advise all who have not tried it to do so in the coming season:—

"An evening-scented Stock of unrivalled fragrance, from the mountains of Greece. No annual in cultivation, even including Mignonette, surpasses or perhaps equals this in the powerful and yet delicate perfume of its flowers. At 100 yards distance the scent of a bed of this annual, on a summer's evening, is often so strong as to arrest special attention. The plant grows 1 foot or more in height—the upper half or two-thirds being a branching spike of pink and lilac blossoms, partially closed during the daytime (when the scent is feeble), but expanding fully towards evening, and remaining so during the night and early morning. Unlike some 'night-scented' flowers, this is pleasing in colour, and, especially when grown in a mass, forms quite a pretty effect. The perfume resembles that of the Stock and Sweet-scented Clematis combined. It must be treated as a common hardy annual."

In reference to Mr. Robson's hint that we should give a few notes on the Apples suited for orchard culture, we beg to say that press of business at this season prevents us doing so; but we shall endeavour to give such a list some time this year.—Thomas Bunyard & Sons.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

Cattleya Dowiana (Captain Dow's Cattleya).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Native of Costa Rica. Flowers yellowish nankeen; lip crimson purple, with yellow lines. A superb species.—(*Bot. Mag.*, *t.* 5618.)

Bowiea volubilis (Twining Bowiea).—*Nat. ord.*, Liliaceæ *Linn.*, Hexandria Monogynia. Native of the Cape of Good Hope. Curious, but inconspicuous.—(*Ibid.*, *t.* 5619.)

Curcuma australasica (Australian Wild Turmeric).—*Nat. ord.*, Zingiberaceæ. *Linn.*, Monandria Monogynia. Introduced by Messrs. Veitch. Native of Cape York, Australia. Flowers yellow; upper bracts pink.—(*Ibid.*, *t.* 5620.)

Helianthemum ocymoides (Basil-like Rock-rose).—*Nat. ord.*, Cistaceæ. *Linn.*, Polyandria Monogynia.—Native of Spain and Portugal. Flowers yellow, with plum-coloured eye.—(*Ibid.*, *t.* 5621.)

Grias cauliflora (Anchovy Pear).—*Nat. ord.*, Myrtaceæ. *Linn.*, Monadelphia Polyandria. Native of West Indies.—(*Ibid.*, *t.* 5622.)

Pelargonium—*Meteor*, a tricoloured. Raised by Mr. Saltmarsh, Chelmsford. In the style of Mrs. Pollock.—(*Floral Mag.*, *pl.* 321.)

Aquilegia pyrenaica.—A dwarf species. Flowers purplish blue.—(*Ibid.*, *pl.* 322.)

Rose—*Napoleon III.* A Hybrid Perpetual, raised by M. Eugène Verdier. Dark crimson.—(*Ibid.*, *pl.* 323.)

Pansies—*Thomas Downie*, white, purple blotch and fringe. *Miss J. Kay*, yellow, crimson maroon blotch. *Imperial Blue*, blue, with deep purple blotch. *Hugh Adair*, white, dark mauve blotch. Raised by Mr. Fleming, Cliveden.—(*Ibid.*, *pl.* 324.)

Azalea—*Her Majesty* "is a sport from Madame Miellez, and one of the finest Azaleas which have yet been obtained, both as regards form and substance, while in colour and marking it is quite distinct from all others. The flowers are of the full average size, and the colour is a soft lilac-tinted blush more or less dense, white at the margin, thickly spotted with crimson in the upper part, and marked with variable stripes, or sometimes broadish bars of deep rosy purple. Its high quality as regards the flower itself, and this novelty of colouring, will make it an acquisition in any collection of these showy plants. Mr. Barnes says, 'I have never seen anything like a spurious flower upon it; and it is also a strong, robust grower'—two qualities which add immensely to its value."—(*Florist and Pomologist*, vi., 2.)

INTENSE COLD.

By our Meteorological Report it appears that the temperature near London fell in the past week to a lower point than has been recorded at any time during the last forty-one years. The minimum thermometer at Chiswick indicated on Saturday morning the 5th inst, that the lowest temperature during the previous twenty-four hours had been 11° below zero, or 43° below freezing. We are assured that the instrument was correct, and that its readings corresponded with other thermometers in the neighbourhood. It will be very interesting if our readers will communicate the temperatures registered in other parts of the country, and, as soon as it shall be apparent, the damage done to vegetation.

OKEFORD FITZPAINE.

A small, quiet, Dorsetshire village, nestling amidst the downs, and surrounded by orchards and pasture lands, where cider enough, and sour enough to give cholera to half the county, is made, and whence rich Dorset butter finds its way to the great all-devouring metropolis; with its church recently and well restored, without any of that gaudiness at which good taste must revolt; very like, I dare say, to many another village in its neighbourhood—such is the quiet haven where I believe we may say our good friend and ardent Rose-lover, Mr. Radclyffe, has anchored, or rather, let us say, is laid up in ordinary for the rest of his days. When one writes of Okeford Fitzpaine it is like writing about Stratford-on-Avon. It is the residence of our Rose-growing friend that will give it an interest in the eyes of the readers of The Journal of Horticulture, even as it is the "Swan of Avon" that makes Stratford the place of pilgrimage for many a true-hearted Englishman. Many a Rose-grower will find his, aye, and if not afraid of the bachelor Rose-grower, her way thither, and I know will ever find a hearty welcome. Let them drive up with a Maréchal Niel or Jules Margottin in their button-hole, and "open sesame" will be the word. Thither at the close of November I found myself wending my way; and albeit it was the wrong time of the year for Roses and Strawberries, I yet knew we should have a genial talk together, and that our imagination would clothe the Roses with their many-coloured blossoms, make us inhale the fragrance of the Strawberries, and even detect the bloom on the Peach trees.

At present any one, even a Rose-grower, might easily pass by Mr. Radclyffe's without noticing it, for it is one of those small, old-fashioned, cottage houses which we see in most villages, close to the road, with a strip of garden about 6 or 8 feet wide between the house and the road. I say at present, because yellow Roses are planted in front, and I doubt not will ere long cover it, as they did the house at Rushton, and so be sure to attract the passers-by. If the house is old the gardens are old too; but a master's hand has been at work on them, and I have no doubt that ere long they will be a garland of beauty and fragrance.

It is well known that Mr. Radclyffe is about the strongest client that Manetti has, that he has written it up on all occasions, and with justice too, for nothing could do better than his did at Rushton; hence all his Roses are dwarfs, budded low down on the Manetti, and the greater portion of them most vigorous. Here, for instance, as you look out of the window is a border of Bourbon Acidalie, consisting of six plants of that fine white, perhaps when caught well the finest white we have; there on that bank on the other side is a bed of Souvenir de la Malmaison. Then, as you mount the somewhat steep bank you find Roses on all sides—Roses in beds and borders, in sixes and dozens—here a dozen of Charles Lefebvre, there a dozen of Jules Margottin, another of Senateur Vaisse, and so on. Oh, what a crown of beauty these will be in July next! At the farther end of the garden you come to a long border of yellow Roses—Gloire de Dijon, Triomphe de Rennes, Celine Forestier, and such-like flowers, which will give a continuous bloom during the greater part of the year. You can see at once the liberal treatment they all receive—plenty of manure of good quality, dug in round the stems, and applied in every way. Then Mr. Radclyffe has an eye to the future. He has sunk a well and put up two pumps (no man could value water more than he does), so that he will be able to give them plenty of moisture if we have a dry season. There is only one point on which I have any doubt—viz., as to whether his Roses will do as well on the Manetti in this rich loamy soil as they did on the dry, strong, chalky soil of Rushton. There the stock throws vigour into plants which on the briar would have languished and died, but I am not so sure that he will find it the same on his present rich soil. I shall be curious to know whether the Manetti will not be too much for the Rose, and whether some of the not-over-vigorous-growing varieties will not succumb to its influence. I fancy I have found it so.

We of course had a long talk about varieties. Mr. Radclyffe has been so bitten by supposed novelties, that he has gone to the extreme, I think, of discrediting all new ones; but as soon as he finds that a variety is really good he sets to work at it, multiplies it, and obtains a good stock. Thus, in his 1200 Roses there might not be found, perhaps, so much variety as in some gardens, especially in those of persons who grow much for exhibition, but they are all well-proved sorts, which will not fail a grower when he wants a few dozens of good Roses. As his Roses had all been moved this year, their removal having commenced in August, there was not much autumnal bloom; but treated as they are, I am sure there will be abundance of it when they have the opportunity of returning the labour and care bestowed on them.

The Strawberries were looking in splendid condition, the collection comprising the best varieties in cultivation. Mr. Radclyffe has written so much on this delicious fruit, that I can only say that the appearance of his beds fully bore out the statements he has made concerning them. Rivers's Eliza, Dr. Hogg, Cockscomb, Mr. Radclyffe, Sir Joseph Paxton, and Frogmore Late Pine seemed to be his special favourites for growth and excellence. They were certainly most promising, and will by-and-by yield, I feel certain, if the season be at all favourable, a most abundant crop.

All who were interested in Rushton will remember the three wonderful Peach trees which were one of the sights of that garden, producing year after year large crops of fine fruit, and invariably succeeding in doing so when others had failed. Now these trees he could not remove, but he was determined not to be without Peaches; so one of the first things that he did was to run up a wall (which I think he will have to make higher), 217 feet in length; on this wall he has planted twenty-two Peach and Nectarine trees, which he is treating on the pinching and repinching system. He says the days of long pruning are or ought to be over. He is not, however, satisfied with these. He is trying the system known as the cordon or Du Breuil system, originated in France, and much practised there both for Peaches and Pears, especially in the neighbourhood of Montreuil, which supplies so much fruit to the Paris markets. He has obtained 107 trees of Peaches and Nectarines, comprising Noblesse, Royal George, Early Albert, Walburton Admirable, Prince of Wales, Barrington, Salway, Early Victoria, Early York, and Bellegarde Peaches; Pitmaston Orange, Victoria, Prince of Wales, Elruge, and Violette Hâtive Nectarines, all on the Plum stock. Of these he has planted fifty-five against the walls and fifty-two a little in advance. If these latter, he says, form fruit and do not ripen, he will another year put lights behind them; and he adds, "If I should succeed in raising fruit from the main stems of maiden trees that have never been cut down and trained, it will be probably the first time that it has ever been done."

It will be thus seen that for the lover of Roses or of fruits—for one who pursues his hobby with all a lover's ardour—there is abundance of interest at Okeford Fitzpaine. It is one of the glories of gardening that you have at all seasons something to interest. Your dried bulbs of Tulip or Gladiolus have each their history and are interesting; your bare bushes of Roses or well-covered plants of Strawberries are not dull to you; and what shall we then say of the glories of the garden in the summer, when the Queen of Flowers holds her court? Then will Okeford Fitzpaine be worth a pilgrimage, and I should gladly lay it out amongst my anticipations of the future, that I may be there to see, and rejoice with our genial and hearty friend in the success of his work.—D., *Deal*.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Little out-door work can now be performed where snow has fallen, and we believe this is the case pretty generally; men should therefore be employed about such work as can be done within-doors, and which we have already pointed out. *Carrots*, where young ones are wanted early prepare a slight hotbed for the purpose, cover it with leaf mould to the depth of 6 or 8 inches, in which sow the seed. A little Radish seed may be scattered on the bed at the same time, but the Radishes must be drawn young. *Cucumbers*, the plants in houses must be strictly attended to, to keep them in health; refrain from removing or injuring any of the leaves, if possible; guard against over-watering, which is particularly injurious in dull weather; prepare dung for the main early bed; make a small seed-bed for raising the plants; after the heat is up, stir the dung inside the frame every other morning until the heat is sweet and regular. As soon as the young plants have perfected their seed-leaves they should be potted, two in a pot 4 inches in diameter, using some of the soil already in the frame. Plant them deep in the pot, so that a little fresh soil can be added as they grow. *Cauliflowers*, should the weather prove severe, the frames containing young plants should be covered with mats, or some material to protect them in some measure. Plants in the open ground should have some pliable rods bent over them, and then be covered with mats. *Dwarf Kidney Beans*, the plants in bearing should be placed in saucers or shallow troughs, having some soil in them, which should always be kept moist. This will encourage the growth of roots, and will also prevent the heat of the flue drying the soil at the bottom of the pots. *Lettuce*, when the frost is severe protect the frames which contain young plants for spring use. Those also which contain Cabbage Lettuce for present use must likewise be covered up. *Mushrooms*, beds should now be made in sheds or houses purposely fitted up for a spring supply. The horse-droppings should be well beaten down, and the bed should not be less than a foot in depth. Temperature sticks should then be thrust to the bottom in several places and examined daily; when the heat has become somewhat regular, and not exceeding 80°, the spawn may be inserted just below the surface, and the bed afterwards earthed up. *Sea-kale*, as that which was covered first is cut, remove the pots or boxes to that portion which has hitherto had no covering, so as to keep up a succession; the dung and leaves which have been previously used will serve the purpose again if a little fresh be added.

FLOWER GARDEN.

A change has taken place in the weather, which renders it necessary to protect all choice trees and shrubs in the open garden which are not hardy enough to withstand frost. The roots and the collar of the stem should be securely protected, as, if the rest of the plant is injured, there is some chance of its shooting again. Trees and shrubs that have recently been planted should have their roots secured from frost, and in some

cases it would be well to bind haybands round the stems of valuable trees. Cover choice bulbs sufficiently to prevent the frost injuring them, and also the roots of Fuchsias and other half-hardy plants. Roses must have additional coverings to the roots, such as litter, moss, leaves, sawdust, or rotten tan, and the tops must be protected with straw, fern, hay, laurel, spruce, or broom boughs, in fact, anything of that kind, and the drier the materials are used the better. The same remarks apply to creepers on walls. Over these mats may also be fastened, for although coverings are not required to be firm, the mats are useful in keeping the other materials dry and clean. Now is an opportune period to make and colour the plan of the flower garden, if not already done. Make it the *beau idéal* of what a flower garden might and should be, and so ascertain the quantity and quality of the plants requisite; then determine, in spite of difficulties, to carry the plan out, and a surprising amount of success is certain to follow.

FRUIT GARDEN.

Prune espalier Apples and Pears, and fork up ground about them in frosty weather, to disturb and destroy insects. In the orchard thin out cross and crowded branches from Apple, Pear, and Quince trees, it is a great mistake to have too much wood. Scrape off moss and lichen from the stems, and if time will serve, dress both these and espalier trees with a mixture of quicklime and blue clay mixed to the consistence of thick paint; if this is well done there will be no need to scrape them for some years.

GREENHOUSE AND CONSERVATORY.

Take advantage of bad weather to wash up and arrange the stock of dirty pots, to paint any tubs or baskets, wires, &c., out of use. Prepare labels of various sizes, and forked sticks for pegging down plants in the flower garden. Look over the stores, and provide whatever may be required for the season's use. The principal work in these houses will consist in keeping them and their inmates scrupulously clean. The conservatory should now be gay with Camellias and forced plants, which will take the place of the Chrysanthemums now over. Keep up a regular succession of plants to bloom in spring, by bringing forward the stock of forcing plants as wanted. Roses, both dwarf and standards, Honeysuckles, hybrid Rhododendrons, and Azaleas, with a host of other things, will enable you, in addition to the usual occupants of the houses, to make a brilliant show throughout the spring. Hyacinths, Narcissus, Tulips, Lily of the Valley, and other plants of the above class, must be duly forwarded as wanted. Hardwooded plants will require a dry, pure atmosphere to guard against mildew and damp. The surfacing of many plants that are not likely to require shifting can be performed. Great caution is required in the application of heat, as it would have an injurious tendency for the future to cause excitement at the present time amongst any tribes of plants that are required to bloom in their natural season. A day temperature of 55° will be quite sufficient here at present; if this cannot be maintained without strong fires, be content with 45°, and moderate fires, remembering that with this low temperature a very small circulation of the air will suffice. A high degree of heat would both hurry the beautiful Camellias and other choice flowers past their best, and create a necessity for the application of more atmospheric moisture, which, unless a warm roof is secured by covering, must end in drip, to the great prejudice of the delicate blossoms.

COLD FRAMES.

As long as the temperature here can be maintained from 32° to 35°, little harm will ensue by keeping them covered. Our practice is to tilt the back and front alternately whenever the glass rises to 32° out of doors. By these means the accumulating damp is dispelled, and the plants receive as much light as will prevent etiolation. Take care that the roof is well protected; the best way is to put a mat on the glass, then a coat of clean straw, and then another mat.—W. KEANE.

DOINGS OF THE LAST WEEK.

A FEW hints have come our way to the effect, "Beware of prophesying about the weather," merely because we mentioned frost as being likely to occur between Christmas and the new year. We never do assume to foretel what is to come, but our guesswork has not been so far wrong after all, as the new-year's morning brought a sharp frost with it, which would have been sharper still but for a fall of snow during the previous night.

Ice.—But for the snow on Wednesday morning, which covered the ice on our ponds somewhat deeply, and thus prevented the thickening of the ice, so as to give it strength for the ice-hook, we would have secured some on that day. We propose when the snow falls less heavily, and if the frost continue quite as severe as it is this (Wednesday) morning, to break holes in the ice and jet water over the snow-covering, which will thus by another morning give us a good thickness of ice, and enable the men to secure it from deep ponds without danger.

We cannot say that the last season has taught us any lessons about ice farther than have been communicated in former years, except this, that snow that had been collected, and with no great weight of ice above it, when dug out was not so firm as we used to have it, and though it answered quite as well for the butler's purposes as ice, it did not suit the housekeeper so well for pastry and icing. On the whole, we consider ice better than snow, when it can be had. Both do exceedingly well when mixed, and especially when there is enough of moisture, either naturally or communicated, to run all into a solid mass, not an interstice being left for air. Ice itself will keep better when so pounded together. All our previous experience with snow alone would point to the importance, not only of pounding it together well, but if the snow is at all dry, using a little water to make it go closer together. Last season we did not use much labour with it, as we expected to put in a heavy weight of ice over it, which would have done the compressing process for us. As it was deemed unadvisable to do so, the snow-ice came out less firm and compressed than usual. When snow is thoroughly compressed, there is little difference between it and ice. When not well pounded, it will be too loose for freezing-mixtures, creams, &c., though very good for cooling-purposes.

Sweeping Walks was a hopeless task. So long as the snow, though deep, was light, a broom could make a pathway quickly, but in half an hour there were 3 or 4 inches more snow. When the snow becomes deep, there is nothing better for walks and roads than simple snow-ploughs, such as a triangle formed of three stout pieces of wood 4 feet long, 1 foot deep, and from 1½ to 2 inches thick for walks, with a handle to hold by at the base, and a ring and chain in front for another man or two to pull by, according to the depth of the snow. For roads, the pieces of wood should be stronger and deeper, and if the base be 6 feet, the two sides should be 7 feet, and be well braced between to hold men or heavy weights if the snow is heavy. Such a simple machine, with handles like a plough, and one or more horses put to in front, would soon clear a great space of road. When the snow is deep, 5 feet in width at the base would be enough, and when once an opening is made, the space may be made wide enough by holding the plough sideways along each side of the opening, and thus sending the snow farther back each way. Except in deep cuttings, and large snow-wreaths, men can do but little with shovels in comparison with what can be quickly effected by such a simple plough.

Gutters and Leads of large houses should be examined, especially when frost precedes snow, as in that case, if a few leaves should collect in the cesspools for the water-pipes, the moisture contained about them may be frozen over hard, and if a sudden thaw come, and there is much snow on the roof, there will be no outlet for the water, the gutters and the leads will be flooded, and the water will pass through the roof and the ceilings of the rooms. We are apt to forget at times how much more quickly snow will disappear from a steep roof, even at an average temperature of from 35° to 40°, than ice will become melted that has been formed in the cesspool of a pipe. We have known cases where generally-intelligent people would not acknowledge this simple matter until they consented to put a pound of ice into a pound of water, even at 40°, and to wait until the ice melted. This simple experiment, too, and testing the temperature of the water in the melting process, would give an idea of the amount of caloric that was parted with before water could become ice, and the amount that must again become absorbed before the ice could be changed into water. At any rate, we can recollect of fully half a score of cases in which, owing to the slow melting of ice, and the unwillingness to incur the trouble and the expense of sending a man to the roof of the house to see if all the water-courses were clear, what would have been obviated by even less than a day's wages has involved a loss, in damage to ceilings, papering, and furniture, of scores of pounds, and in one or two cases hundreds would have been nearer the mark. This is a matter generally attended to by the carpenter, bricklayer, or gardener, and very often by the last. There is nothing very desirable in

the job; but it is important that some one should have it as a matter of duty to attend to, otherwise it may turn out that what is the business of everybody may become the business of nobody, until after much mischief is done. Perhaps, too, the appointing some one in particular to look after such a simple matter is all the more important, as just in proportion to the energy, fidelity, and industry a man brings to bear on his own particular department, so in general will it be found that he is extremely sensitive as to going at all out of that department without clear and specific orders and defined arrangements.

KITCHEN GARDEN.

Here the weather has pretty well brought all matters to a stand, and rabbits and hares will give us little trouble with some other things. We have before had trouble with young plantations of Cabbages, but now we shall have none with a nice quarter planted in September. Not a single plant is left, and Brussels Sprouts will ere long follow them if the four-footed game are to have their way. These Cabbages had been netted round, but nothing but high wire netting would have kept the vermin out. Seeing how matters were going, we have potted some hundreds of strong Cabbage plants, and set them in an orchard-house, resolving to plant them out in better times. We did so with a fine lot of Cauliflowers last season, and after all they were so cut off level with the ground by rats, that to have Cauliflowers moderately early we were obliged to force them on under glass lights. Wherever game and rabbits are encouraged close to and in the garden, rats follow as a matter of course, and they will increase do what you will, until they pretty well frighten people to go out at night from the strength of their bands, and their clearing everything that is eatable before them, as we have reason to believe, from the newspapers, they are already doing in some parts of the country. All forced vegetables are much the same as in previous weeks, and it is well to have a good stock in such weather, as it makes one more independent of out-door supply.

FRUIT GARDEN.

The weather did not permit of much being done out of doors, with the exception of wheeling to Gooseberries and Currants manure and the decomposed rubbish-heap, which will be pointed in when the weather changes. After the heavy snow on Wednesday morning we took the opportunity of *smoking* the orchard-houses *with bruised Laurel leaves*. The snow was shaken off the Laurels with a rake, and a dozen armfuls of the young shoots were obtained. The task was not one of the most pleasant, but then it did not last long, as the shoots and leaves could be beaten and broken inside, and then there was plenty of in-door work for the day. These houses are so open that it would be a great trouble to smoke them with anything, unless at such times as there was a good covering of snow on the roof. We need not give details as to making the small fires and piling the half-bushels of bruised Laurel shoots and leaves on them, farther than this, that the great object is to obtain all the smoke possible, to have it cool, and never to allow a twig or a leaf to flare. The houses were filled with a very dense smoke for at least six hours, and though we have no faith in any kind of smoke destroying the eggs of insects, we would not give much after such a continued smoking for anything having the breath of life. Even a man could scarcely go in to look at the smouldering heap for a few minutes. We forgot, we think, to answer the question put last year as to the efficacy of such smoking with Laurel leaves and shoots as contrasted with tobacco smoke if it could be cheaply obtained. Well, if equally cheap, we would by far prefer tobacco of home-growth or otherwise, and one of our correspondents lately showed how that could be successfully and economically grown in shrubberies in fresh soil, and afford there, too, a nice appearance; but at present, not to speak of the law interfering with private growth, there can be no comparison as respects expense between tobacco and the Laurel leaves for smoking for such purposes; and as prevention is better than cure, we would always be inclined to resort to the plan under similar circumstances. Through this and other precautions we have of late years been troubled with few insects, with hardly one all last season in these houses. We must not, however, make too sure, and a little effort to secure freedom from insects now will be much easier than killing them if they do appear at a critical time. With snow-covered glass and all together we could scent the pungent odour of the Laurels some hundreds of yards from the houses.

ORNAMENTAL DEPARTMENT.

The great object has been to keep cold pits and frames secure by covering, and in houses just to keep plants safe, and at the lowest temperature compatible with safety; and this required the smallest amount of air to be given, and also prevented the waste of heat in raising into vapour the amount of moisture that would have been required in a higher temperature. Until now, damp and excessive vapour in the atmosphere have had to be guarded against, and no great amount of vapour will have to be added to the atmosphere of houses kept in a cool state, say from 45° to 55°—at least not much more vapour will be required than can be given by damping the floors and stages of the house, unless the outside thermometer should be much more than 10° below the freezing point. Much also will depend on the state of the atmosphere, as a glass house will often be more cooled in a temperature of 5° below freezing, with a brisk wind, than it will be when the outside is 10° below freezing, but with not even a zephyr moving. In protecting we threw a little straw over some pits supplied with a little heat inside, but in all other cases we were glad of the heavy fall of snow. It will protect many vegetables from the cold, and it will make cold pits and frames more secure. As we know that the temperature inside is low enough, so as to arrest growth, we will not take away the snow or expose the glass so long as this weather is likely to last, and the keen frost along with the snow, even with a low barometer, would lead us to expect some days longer of it.

So long as this stormy weather lasts the keeping the houses safe, with no waste of fuel, must ever be a first consideration. If the damper is not used, heating by hot water must always be expensive, and for small single houses much more so than flues or stoves. We have been amused by the details given by "Maud" about lighting a stove, and could corroborate them with instances of those who ought to have known better. Looked at from "Maud's" stand-point, the whole article is admirable; looked at, as we think unnecessarily, by bringing in the gardener's stand-point, there are several allusions that may receive hereafter a little healthy criticism. But as to the fire, we have had many smart young men beaten with a furnace, that, besides heating a boiler, went through a long tortuous flue in the back wall of the house. When this furnace fire was lighted after long periods of damp weather, there was no chance of making it draw if a soot-door, near the end of the flue, was not taken out and a small brisk fire put in the flue there. We recollect seeing four clever fellows once, almost as black as chimney-sweeps, but with bright lines down their cheeks where the water was brought liberally from their eyes by the acrid, sour smoke. We had seen the smoke pouring out of the shed in which the stokehole was placed instead of coming out at the chimney-top, and had heard the men called in, one after another, to consult, as smoke-doctors, in the great emergency, as to how to make the smoke go up instead of out on them, and all without avail. Well, everything had been done correctly, a little dry litter and dry wood had been used for lighting, the furnace door had been shut, and the ashpit door had been opened that the air might reach the fire through the bars, and yet out poured the smoke by the crevices of the furnace door, open ashpit door and all—and why? because no one had thought of the damper, which was full in near the furnace, and when pulled out smoke and flame shot up like a sky-rocket. We congratulate "Maud" on having such close-fitting furnace and ashpit doors. They are the first essentials to economical heating by boilers; and the second essential is the due regulation of the damper—that is, the damper should be pulled out on lighting the fire, at least for half its length, and then whenever the fire becomes bright and the heat is well up, shove the damper in to its full length, and afterwards draw it out just a little to give a little draught. There seems to be so much difficulty in this simple matter, even among professionals, who, by having the damper out at all unseasonable times, send the heat from tons of coals up the chimney, that we have come to the conclusion, that in all heating of small and moderate-sized houses by boilers, it would simplify matters to pull the damper out partly when lighting the fire, and after the fire was established to send the damper at all times right across the flue, but to have a hole in the centre of the damper about 1 inch in diameter, or two or three holes that would come to as much, which would be sufficient for draught, and yet send much heat back again on the boiler.—R. F.

TRADE CATALOGUE RECEIVED.

William Paul, Waltham Cross, London, N.—*Select List of Vegetable, Flower, and Agricultural Seeds, Seed Potatoes, &c.*

COVENT GARDEN MARKET.—January 5.

The wintry weather of the past week has shut out the greater part of our supplies, as the growers are almost unable to get to market, and rough goods have considerably advanced in price. Oranges and Nuts are plentiful, owing to the large stocks on hand; but Pears are very limited in quantity, and good dessert Apples command a ready trade. Potatoes remain as before, but there are few arrivals this week, and very little business has been transacted.

FRUIT.

	s.	d.		s.	d.
Apples ....½ sieve	2	0 to 3	0	Melons.....each	2	0 to 4	0
Apricots ..... doz.	0	0 0	0	Nectarines ..... doz.	0	0 0	0
Cherries ..... lb.	0	0 0	0	Oranges 100	5	0 10	0
Chestnuts .....bush.	10	0 18	0	Peaches.....doz.	0	0 0	0
Currants..... ½ sieve	0	0 0	0	Pears (dessert) .. doz.	3	0 6	0
Black ..... do.	0	0 0	0	kitchen..... doz.	2	0 4	0
Figs ..... doz.	0	0 0	0	Pine Apples ..... lb.	3	0 6	0
Filberts.....lb.	0	0 0	0	Plums ..... ½ sieve	0	0 0	0
Cobs..... lb.	0	9 1	0	Quinces ..... doz.	0	0 0	0
Gooseberries .. quart	0	0 0	0	Raspberries.....lb.	0	0 0	0
Grapes, Hothouse..lb.	4	0 8	0	Strawberries ..... lb.	0	0 0	0
Lemons 100	5	0 10	0	Walnuts..... bush.	10	0 20	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes ..... each	0	0 to 0	0	Leeks ..... bunch	0	6 to 0	0
Asparagus .... bundle	0	0 0	0	Lettuce.....per score	2	0 3	0
Beans, Broad.. bushel	0	0 0	0	Mushrooms .... pottle	1	0 2	0
ScarletRun.½ sieve	0	0 0	0	Mustd.& Cress, punnet	0	2 0	0
Beet, Red..... doz.	2	0 3	0	Onions.... per bushel	4	0 5	0
Broccoli ..... bundle	1	0 1	6	Parsley..doz. bunches	12	0 0	0
Brns. Sprouts ½ sieve	2	0 3	0	Parsnips ..... doz.	0	9 1	8
Cabbage ..... doz.	2	0 4	0	Peas..... per quart	0	0 0	0
Capsicums.....100	0	0 0	0	Potatoes ..... bushel	2	6 4	6
Carrots..... bunch	0	6 0	8	Kidney ..... do.	3	0 4	0
Cauliflower ..... doz.	2	0 6	0	Radishes doz. bunches	1	0 1	6
Celery ..... bundle	2	0 3	0	Rhubarb ..... bundle	0	0 0	0
Cucumbers..... each	1	0 2	0	Savoys ..... doz.	3	0 4	0
pickling .... doz.	0	0 0	0	Sea-kale ..... basket	3	0 4	0
Endive..... doz.	2	0 0	0	Shallots ..... lb.	0	8 0	9
Fennel ..... bunch	0	3 0	0	Spinach ..... bushel	5	0 6	0
Garlic ..... lb.	0	8 1	0	Tomatoes.... per doz.	0	0 0	0
Herbs ..... bunch	0	3 0	0	Turnips ..... bunch	0	6 0	0
Horseradish .. bundle	4	0 6	0	Vegetable Marrows dz.	0	0 0	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

Beurré de Rance Pear (*J. J. T.*).—You were misinformed. There is only one Pear known by this name. It is fully described and its synonymes stated in Hogg's "Fruit Manual." We apologise for having omitted this answer accidentally for so long.

Nitrate of Soda for a Lawn (*Berley*).—Nitrate of soda is usually sold under the name of cubic petre. It should be pounded fine and sown over the lawn in March at the rate of 1 lb. to each thirty square yards.

Osier Planting (*Salix, Dublin*).—For white basketwork, the French Willow, Salix triandra; for other baskets and fine wickerwork, Salix Forbyana. The annual shoots of the first are not less than 8 feet long, and of the second not less than 6 feet. The sets should be planted 3 feet from each other. We do not know which species is locally known as "The Packthread Willow."

Books (*A Subscriber, Bandon*).—"The Garden Manual" for twenty postage stamps, "The Poultry Book for the Many" for eight postage stamps, and "Bee-keeping for the Many" for five postage stamps. If you enclose the stamps with your direction, the books will be sent to you from our office post free.

Garden Walks (*Idem*).—You may make most excellent walks without gravel, if you can procure gas tar and follow these directions:—A layer of stones, brickbats, shells, or clinkers, 6 inches deep, to form a dry bottom; a layer of chalk or lime, in the proportion of one to ten of the stones or other foundation, and well rolled and watered to the thickness of 3 inches, with a rise of 2 inches in the centre; over this half an inch of gravel and lime, or fine chalk; water and roll well again; add one-eighth of an inch of the best coloured gravel; and again roll until quite solid. Have the walk 2 inches wider on each side than you desire, as this checks the turf and weeds from encroaching, and prevents the rain water getting to the foundation of the walk.

Stocks for Camellias—Propagating Azaleas (*Constant Reader, J.H.*).—The best kind of stock is the single-flowering Camellia. The stocks are raised by sowing the seed, or from cuttings, but the latter are not nearly so free-growing. The beginning of April is a good time to graft Camellias. The varieties of Azalea indica are propagated by cuttings taken from the shoots of the current year when about half ripe; inserted in very sandy peat and silver sand under a bell-glass on a gentle heat, they root freely. The "Garden Manual" will suit you. It may be had free by post from our office by enclosing twenty-six postage stamps with your address.

Evergreen Trees for a Blind (*Ben*).—The Weymouth Pine we fear would not serve you; but Pinus austriaca and Scotch Fir would, we think, grow well when established. Pinus cembra will grow almost anywhere, and Pinus maritima thrives in such a soil as yours; so does the Pinaster Pine, of which Pinus Hamiltonii, about which you inquire, is but a variety.

Pteris serrulata Sowing (*M. H.*).—The spore-cases on the part of the frond sent us were ripe, and the spores shed. It will suffice to place the fronds over the pans full of compost, and to rub the under side of the frond with the hand gently, so as to cause the spores to fall on the surface of the compost. If you do this until the surface is covered with a fine brown powder perceptible to the eye, you have done all that is needed.

Camellia Leaves Yellow (*Idem*).—Your plant is only shedding its old leaves. Continue it in the stove until the growth be perfected, keeping it in the coolest, lightest, and most airy part. When the wood becomes firm, and the buds show in the axils of the leaves, remove the plant to a cool house.

Netting to Protect Seed-beds (*Tyro*).—You can obtain the netting of any dealer in fishing tackle, and such is frequently advertised in our columns. You may save yourself much trouble in the protection of seed-beds by moistening the seeds you propose sowing, throwing a few pinches of red lead over them, and mixing up so as to give the seeds a reddish hue, or a slight coating of the red lead. No birds take our seeds now, and we simply treat them in the above manner before sowing.

Mixing Animal Manure and Lime (*Idem*).—From the fact that lime sets free the ammonia by causing rapid decomposition of animal matter, it is considered wasteful, ammonia being produced faster than the plants are able to appropriate it, and it is consequently often lost. Animal matters had better decompose slowly, and thus give out ammonia gradually.

Trenching (*Idem*).—Your ground will be all the better of a good trenching, bringing some of the subsoil to the top, so that by exposure to frost and air it will be rendered suitable for the growth of plants. The black soil is best at bottom. The roots will go down to it.

Grafting Pelargoniums (*R. J.*).—Your best mode of grafting will be side-grafting, leaving the head of the stock partially reduced until the union is complete. The operation would be much facilitated by placing the plants worked in a gentle heat of 50° or 55°, and a bottom heat of from 65° to 70°, and maintaining a close and moist atmosphere, with shade from bright sun. The surest of all modes is grafting by approach, or inarching, and you may follow that mode by raising the plants for scions to the height required, they being in small pots.

Red Spider on Peach Trees (*H. H.*).—Unnail the trees, and wash the wall with a solution of 8 ozs. of soft soap to the gallon of boiling water. If the wall is very much cracked and full of crevices, have all the joints made good with hair mortar, and wash the wall with fresh lime and soot, mixed with sufficient urine to bring them to the consistency of limewash. Apply the mixture boiling, and take care not to drop the wash upon the trees. Before nailing wash them with a solution of 4 ozs. of soft soap to a gallon of water, and apply it at a temperature of 140°, taking care not to dislocate the fruit-buds. The best preventive of the attacks of red spider is to keep the trees well syringed with water from a garden engine during hot weather, and to afford them plenty of water at the roots. Avoid gas tar.

Cucumber (*L. A.*).—"Telegraph" is, as you say, one of the most prolific and best varieties for early forcing. Any of the principal London seedsmen, we should think, could supply you with seed of it.

Wood of Peach Tree (*X. A. B.*).—The wood enclosed by you was perfectly healthy. The darker colour of the centre is natural. As you do not state whether the tree was over-luxuriant, nor any other particulars, we cannot suggest the cause of unfruitfulness. Cutting off the branches most probably was wrong.

Drying Plants (*Hortus*).—Put them properly spread out on dry sand, and cover them with some of the same, and dry them in a gentle heat. When dry fasten them by stitches of thread on cartridge paper.

Greenhouse Constructing (*J. F. C.*).—We like, as a whole, the proposed plan of your house very well. We would advise that for a 14-feet-wide house, the back wall should be from 2 to 3 feet higher than the proposed 11 feet. The modes of ventilating will answer very well. The proposed conical stages in the house—that is, four shelves on the one side, four on the other, and one wider at top in the centre, will answer for storing away great numbers of small pots in winter. For showing off flowering plants in such a lean-to house, a flat-sparred table 24 or 27 inches off the ground would do as well and cost much less money. The proposed heating will keep out sharp frost. If you wanted more heat you could take two pipes, smaller ones, along the back and as far as the doorway. You could also greatly help by having a cistern where your two proposed pipes terminate at the doorway. The 16-oz. glass you allude to would do, and so would the rafters 20 inches apart, but to have a nice fixed roof, and be in little danger from hail, &c, we would advise the rafters to be 18 inches apart, and the glass to be 21-oz., though it would cost nearly a third more. Wood will answer for the front shelf, but stone or slate would be better. To do justice to the plants the Vines should not be nearer than 5, or even 6 feet to each other. Conical boilers supplied from the top are easiest fed, but unless the grating works on a pivot so as to let all fall down, they are worse to clean out. On the whole we think a small saddle boiler will be as useful to you; in fact, if the house had been ours, and the pathways had been tiled instead of being flagged, we would have had a small flue all round below the tiles instead of a boiler, and then on a cold day the warm tiles would be comfortable to the feet. We think your stokehole and all else will do.

Lifting Vines (*S. D. M.*).—The Vines you propose lifting will, if the operation be carefully performed, bear a crop next season, but we would not take more than half a crop, and if the Vines show weakly, we would not allow them to bear this season. After replanting cover the border over the roots with 18 inches or 2 feet of hot dung, keeping the house cool for a fortnight or three weeks, and allow the Vines to break naturally—that is, do not force them. The chalk will answer for the border instead of lime rubbish, but we prefer the latter.

Converting Pits into a House (*A Prolix Inquirer*).—Your range of brick pits 29 feet long by 5 in depth, we have no doubt would make a good house by going to the expense of adding to them another side and ends, thereby making a span. You do not state the width, and we cannot, therefore, advise you as to size and the purposes for which it might be employed. Unless you have other pits or frames we would not recommend the conversion of the former into houses; for,the expease is in many cases equal to that of new structures, and after it has been incurred the converted pits are seldom equal to such in durability, appearance, and utility. Besides, after much has been spent in the conversion of the pits, further outlay will probably be necessary in providing new frames or pits, which are for all intents and purposes the most useful of glass structures. If you do not want pits for Cucumbers and Melons, and for affording protection to plants, or if you elect to grow them in houses, when a place already built and needing no increased expenditure would answer as well, if not better, the proposed conversion may be made. The case will be different if the pits are of sufficient width for a house already, and only need pathways and slight alterations for heating, &c.; but even then we do not see how your garden will be complete without frames or pits, nor how you will manage without them.

Labour for a Garden of One Acre (*Idem*).—Your garden of one acre, one-fourth of which is grass, one-fourth shrubbery, and the remainder kitchen garden, with, in addition, a greenhouse and the pits above named, will be well managed by a gardener, affording him occasional help such as that you speak of by your groom, though it is as well to keep every servant's work as distinct as possible, and interfering as little with that of others as the case will permit. Doing so saves much grumbling, which is never pleasant to either employer or employed, and, besides, no master can teach a servant a more important lesson than that of self-reliance. It does away with all excuses, and every one is then able to answer for himself. An active and skilled gardener would manage your garden to your satisfaction, and he would have nothing to complain of in respect to being overwerked. We think a gardener of the qualifications you require, ought to have 25*s.* per week without a cottage, or 21*s.* per week with one. We think it is not only consistent with "your interest," but that of your gardener also, that "you should take an active interest in the garden," for where there is no interest the master will often neglect furnishing proper working plant and materials, which to an active servant is discouraging.

Culture of Water Lilies in a Vase (*Rus in Urbe*).—1, Plant them during April or May, securing the roots in the mud, and pressing it about them so that they may be kept at the bottom; or tie a moderately large stone to the root of each, which we find from experience to answer well, the plants being dropped into the vase at the desired place. 2, Place 6 inches of turfy loam of a clayey nature at the bottom of the vase, and equally over it, and a short time after the plants are put in cover the mud with an inch of fine gravel from which the dirt has been washed out. 3, The Lilies will thrive if fresh water be admitted every day to the amount of one-third the contents of the vase. By fresh water, rain or pond water is meant. 4, It would do to feed the vase with soft water by a pipe from a cistern at the top of the house; but as you say the supply from that source would only be available when rain falls, it may be too uncertain and insufficient. The vase should at all times be kept full of water, and never have less than 1 foot of water in it, and better the full depth of 18 inches. Gold fish would thrive in the vase very well in summer, but not in winter, for the water will be liable to be frozen in a mass during severe weather, and if not it may be too cold for the fish in winter. If the vase were placed in the ground so that one-third or so were above the ground, you might have the gold fish in winter as well as summer, covering half the vase over on the approach of frost with a thickness of 9 inches or 1 foot of straw, and removing it in spring. This would not interfere with the Lilies, and it would save the fish, the ice of the uncovered part being broken daily.

Hollies Grafting and Budding (*Ilex*).—The grafting may take place when the stocks exhibit signs of growth, or begin to swell their buds, which will be the case in April, the scions being taken from the trees and inserted in the stock the same day. Let the scion be the wood of the previous year, and of free growth. Budding should be performed when the leaves of the tree from which the buds are taken have attained their full size and the buds are discernible in their axils; it requires a certain amount of discrimination to make sure of wood-buds. These are more generally situated on the strong shoots, and especially those that come from a branch which has been cut back or shortened. Drawings and full directions for grafting and budding are given in "Fruit Gardening for the Many," which you can have free by post from our office, if you enclose five postage stamps with your direction.

Names of Fruits (*W. B. S.*).—No. 1, Beauty of Kent; 2, Margil.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending January 5th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 30	29.850	29.213	45	19	47	45	W.	.00	Clear; quite cloudless; very fine; frosty at night.
Men... 31	29.270	29.247	35	19	44	44	S.W.	.00	Frosty; partially overcast fine; frosty; barometer very low.
Tues.. 1	29.342	29.250	35	15	43	43½	N.	.00	Clear and frosty; exceedingly fine; frosty.
Wed. . 2	29.600	29.004	30	—4	43	43	N.E.	.00	Heavy snow storm; drifting snow; intense frost at night.
Thurs. 3	29.810	29.650	33	2	40	40	N.E.	.00	Hazy; densely overcast snowing; overcast; severe frost.
Fri. .. 4	29.900	29.888	30	—11	40	40	S.W.	.00	Intense frost, continuing throughout the day; 11° below zero at night.
Sat. .. 5	29.974	29.902	30	16	40	40	N.E.	.54	Hazy; overcast; cold wind at night.
Mean	29.686	29.450	34.00	8.00	42.43	42.21	..	0.54	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GAME FOWLS.

SHAPE AND CARRIAGE OF TAILS, AND OTHER POINTS.

Adverting again to the article by "Yorkshire," of the 27th of November last, I am well aware that many breeders, exhibitors, and judges prefer the close-switch or whip-tailed birds, but fully as many, I think, prefer the noble, full, ample, spreading-tailed birds, or "the up-and-spread-tailed" birds as they are termed. I never did or could like the very close-tailed birds, or pinched-up, cramped, and shrunk tails, as I think they give the birds a meaner appearance, and the narrow tail makes the body appear too bulky, or clumsy; whereas the ample spreading tail makes the body appear smaller and neater in size and shape. The up-and-spread-tailed birds are shorter in body and in feather in general, as well as more spirited, I think.

The advocates of the switch or whip-tailed birds say that these birds have neater tails, and are generally closer in feather. I cannot see this, and think the ample tail is nobler and gives the bird a nobler appearance, and I also think that the full crescent-like curve of a well-sickled tail is one of its greatest beauties. The best hens should have their two upper-tail feathers with a slight and graceful curve, which adds to their beauty, I think. The whip or close-tailed birds would look as well, especially the hens, if they had only a few upper feathers in their tails, as they might almost as well be without half their tail feathers.

In my experience the least-spirited birds are those with the long, drooping, closed tails; and the most spirited have the rather short tails, carried well up, and spreading or fanned, with curved upper feathers. Game fowls' tails should not, however, be so high as Bantams' tails. Long-tailed Game fowls are certainly longer both in body and in feather than short-tailed birds are. If not for this defect, the long-tailed would possess the most beauty. I do not, of course, admire the coarse and clumsy tails found in birds that are coarse in feather and in bone. The happy medium is, I think, best as to the length of tail, nor should birds be too cocked-tailed for true beauty. Doctors differ, however, and so do amateurs of Game fowls on this point.

Breeders differ also as to the length of the legs and wings. I think the happy medium is also best here as well. A long-legged bird over-reaches his opponent in fighting, and moves his legs too slowly; and a too-short-legged bird must "fight very close" to reach his opponent at all. A too-long-winged bird is too long in body in general, though long wings are the handsomest. A too-short-winged bird is too heavy in the body in proportion to his wings for flight, and is ugly. Game cocks should never carry their wings upon their backs like Geese. They should carry the wing so as to protect the fleshy part of the thigh, but not so low as a Bantam's wing is.

Cocks of 6 lbs. weight are too heavy and too slow in their motions. Cock chickens as a rule seldom reach quite the weight of their sires; therefore, I think that brood cocks from 5¼ to 5½ lbs., or 5¾ lbs. at most, breed the best chickens for exhibition. Light-fleshed active birds are, of course, the best brood cocks. I have also noticed that the tail feathers in the spread or fanned-tailed birds stand stiffer, stronger, and harder than in the close-tailed sorts. I am convinced that a drooping tail shows a drooping spirit.

Remarks such as those by "Trent Side" and the old Scotch lady, of course, merit no reply whatever, and require none. Some admire clumsy beauty, and some the trne and symmetrical beauty. I am of the latter number. I can only deny that I have ever been "put right," or "put out" either,

by any remarks made, as some of the writers of them appear to have been.—Newmarket.

EXHIBITING BORROWED FOWLS.

You ask, Is it not contrary to all poultry exhibition rules to exhibit birds not the exhibitor's own? In reply, I say that scarcely is there a poultry show in this district (and I believe others to be the same), in which every pen of birds belongs to the person who exhibits them. I will take for example Middleton, Birmingham, and Manchester. I was at the whole three of the last Shows held at these places, and at two of them I know birds were exhibited that did not belong to the persons who had them in their names, for I knew the birds as well as I know any person I do business with.

Besides, it is, I assure you, quite common with the largest and most successful exhibitors to borrow and lend, particularly if their own birds get out of condition, &c. I could mention the names of a host of persons who would tell you they did it (if they spoke truly), and that it is a general understanding amongst friendly exhibitors to borrow and lend. Within the last few months I have known poultry travel for more than thirty miles, to be exhibited at local shows in the borrower's name; and generally it is understood, as I have said before, to borrow and lend, if agreeable, which is often the case, to the parties so dealing.

If this practice is brought up amongst the poultry world, a good many will say, What harm is there in it? If birds can beat mine on their merits, I am glad to see them do so, no matter under what name, nor who is their owner. Certainly if they are borrowed birds there is no honour for the exhibitor, and no one knows that any better than the party who wins under such circumstances. In this district secretaries and committees, as my countrymen say, "wink" or close their eyes to the borrowing and lending system, and I think some schedules do not specify that the birds shall be the exhibitor's own, and this has been done because the exhibitors were the masters.—Exhibitor.

[The foregoing is from an honourable exhibitor, who would not adopt a practice that is contrary to good faith. In his own case he exhibited in the name of his breeder, which needs no objection; but we consider that borrowing fowls to exhibit is open to great abuse, and, therefore, should not be allowed.

Let us take as an instance a poultry-fancier, whom we will call G, having a yard of ordinary Cochin-China fowls, and hiring from a well-known breeder of that variety, whom we will call H, a pen of his best birds. G exhibits and gains a prize, and, consequently, is enabled to sell eggs and chickens at a high price. Is not that obtaining money under false pretences?—Eds.]

INJURIES OCCURRING TO EXHIBITED BIRDS.

I exhibited a Golden-pencilled cockerel at Manchester. He was delivered to the railway company in perfect feather, and on my arriving at the Show on the first day (Dec. 21), at 10.30, I found both his sickle feathers had been drawn. The Secretary of the Show knew nothing of the matter, neither were the feathers in the basket. Who is responsible?—Charles Sidgwick, *Ryddlesden Hall, Keighley*.

[The difficulties in such cases are the proving the amount of damage, and who was the wrong-doer. If a railway porter caused the damage the railway company would be responsible; if a man employed by the Exhibition Committee, that Committee would be liable.—Eds.]

LEEDS POULTRY SHOW.

In the report of the above Show, page 493, is the following remark:—"The next class was for Black Bantams, and they were good—so good that Birmingham first-prize birds could not gain the Judges' notice." How your correspondent can so far have fallen into mistake is to me an enigma, unless his words are intended more in irony, as it was patent to all eyes that one of the greatest possible mistakes had here been made, if we may rely at all upon the rule laid down by our greatest authorities, that "Black Bantams shall have black legs." The first-prize pen contained a cockerel with flesh-coloured legs and puckered earlobes, such as I have seen disqualified at many previous exhibitions (though the Judges may easily be exonerated from blame, for this class was unfortunately placed in the worst lighted part of the building), while several pens, the most perfect I ever saw, were passed over without notice. If puckered earlobes and flesh-coloured legs be an "improvement" in Black Bantams, then, in the humble opinion of your correspondent, we, like Paddy, are advancing backward.—Black Bantam.

After criticising the various classes up to No. 26, your correspondent goes on to say, "The cup for the best pen of Hamburghs fell to Mr. Beldon's Silver-pencilled, and they well deserved it." I say that it was a mistake, to say the least, as the cockerel had one of his sickle feathers dark and the other light, which ought to have been a disqualification for the cup, which might have been very safely awarded to the first-prize pen of adult Golden-spangled belonging to the same person, and I believe Mr. Beldon felt ashamed of the decision. As regards the Black Bantams, the cock in the first-prize pen had white legs, and was altogether a large bird. So much for the judging in these classes, and it would not be much trouble to go further with the mistakes in other classes.—J. W.

POULTRY CLUB.

Mr. Zurhorst, in your impression of January 1st, attaches my name to a series of false statements, which statements if adhered to, or repeated, he will probably find that he is not quite the immaculate being he thinks he is.—Edwd. Tudman, *Ash Grove, Whitchurch*.

PAISLEY ORNITHOLOGICAL ASSOCIATION SHOW.

The thirteenth annual Exhibition of the above Association was held on the 1st and 2nd inst., in the Volunteer Drill Hall, and was most successful. Upwards of 1200 birds were shown, and an unusually large number were sold.

Spanish.—First, J. Hutchison, Bishopton. Second, J. R. Rennards, Helensburgh. Third, W. Creelman, Kilmarnock. *Chickens.*—First and Cup, J. Fyfe, Rempock Point, Gonrock. Second, A. M'Lachlan, Paisley. Third, J. Crawford, Beith.

Dorkings (Coloured).—First, W. Reid, Hayston, Kirkintilloch. Second and Third, H. Heys, Springfield. *Chickens.*—First and Cup, R. Fulton, Cardross. Second and Third, J. Burns, Craigends.

Dorkings (White).—First and Third, J. Aitken, Paisley. Second, J. Pettigrew, Dalmellington.

Cochin-China.—Medal, First, and Second, J. Stuart, Helensburgh. Third, A. Paterson, Airdrie.

Brahma Pootra.—First and Second, A. Campbell, Blythswood. Medal, Brown & Cochran, Perth. Third, Major Smith, Janefield Place.

Old Scotch Breed.—First, A. Grant, Glentyan Mill. Second, J. M'Diarmid, Glasgow. Third, W. Thomson, Glasgow. Medal, R. Watson. Busby.

Hamburghs (Golden-spangled).—First, W Wotherspoon, Castlehead, Medal, Second, and Third, R. Cunningham, Stewarton.

Hamburghs (Golden-pencilled).—First and Medal, R. M'Gregor, Perth. Second, B. M. Richard, jun., Dumbarton. Third, A. M'Ewan, Stewarton.

Hamburghs (Silver-spangled).—Medal, First, and Third, J. Stewart, South Arthurlie. Second, A. Glen, Erskine.

Hamburghs (Silver-pencilled).—First and Medal, R. Calderwood, Stewarton. Second, A. Glendinning, Strathblane. Third, J. F. Hamson, Kendal.

Polands (Topped).—First, W. R. Menzies, Crossmyloof. Second, D. Murray, Eglinton Castle. Third, R. M'Nab, Cardonald.

Game (Black Reds).—First and Medal, J. H. M'Nab, Barrhead. Second, P. Alexander, Bridge of Weir. Third, J. Bryson, Hoggansfield.

Game (Any other colour).—First and Medal, J. J. Wilson, Darlington. Second, J. M'Indoe, Barrhead. Third, W. B. Menzies.

Any other Breed.—First and Third, W. White, Paisley. Second, W. R. Menzies.

Ducks (Aylesbury).—First and Second, H. Heys. Third, H. Jones, Aylesbury.

Ducks (Any other colour).—First, J. H. M'Nab. Second and Third, A. Grant, Kilbarchan.

Game Bantam.—First and Medal, W. Mahon. Jedburgh. Second, J. Sharp, Johnstone. Third, R. M'Gregor.

Bantams (Black).—First, A. Clelland, Crookitholm. Second and Third, J. C. Neilson, Airdrie.

Bantams (Any kind).—First and Medal, W. Morris, Paisley. Second, T. Knowles, Aberdeen. Third, W. Raeside, Irvine.

PIGEONS.

Powters.—*Blue.*—First and Medal, R. Fulton, London. Second, W. Lighthody, Glasgow. Third, G. White, sen., Paisley. *Black.*—First, J. Sharp, Johnstone. Second, R. Fulton. Third, G. White, sen., *White.*—First, R. Fulton. Second J. Sharp. Third, W. Neilson, Johnstone. *Any other colour.*—First, R. Fulton. Second, W. Lighthody. Third, G. White, jun.

Tumblers (Short-faced).—First, and Second, R. Fulton. Third, G. White, sen.

Tumblers (Common).—First and Second, J. Sharp. Third, J. Fielding, Rochdale.

Carriers (Any colour).—First and Second, R. Fulton. Third, G. White, sen.

FANTAILS.—First, J. Muir, Glasgow. Second, W. R. Park, Melrose. Third, J. Sharp.

JACOBINS.—First, G. White, sen. Second, J. Sharp. Third, F. Waitt, Birmingham.

NUNS.—First, W. R. Park, Melrose. Second, J. Sharp. Third, J. and D. Gray, Kilbarchan.

TURBITS.—F. Waitt. Second, G. Brown, Kilburnie. Third, J. Sharp.

PIGEONS (Common).—First, R. Stirrat, Dalry. Second, J. Glasgow, Dalry. Third, G. Brown.

ANY OTHER DISTINCT BREED.—First, J. Fielding. Second, G. White, jun. Third, J. Muir.

CANARIES.

PAIRS FOR SILVER CUP.—Cup, A. Kelly, Paisley. Second, W. Hunter, M. D., Kilbirnie. Third, T. Buchanan, Glasgow.

YELLOW.—*Cocks.*—First, D. Bell, Beith. Second, J. Mair, Kilmarnock. Third, G. Ayton, Glasgow. *Hens.*—First, J. Graham, Kilmarnock. Second, A. Mitchell, Paisley. Third, W. Harper, Paisley.

BUFF (*Cocks*).—First, J. Mair. Second and Medal, T. M'Motrie Third, H. Webster, Kilbarchan. *Hens* —First and Medal, W. Calderwood, Beith. Second, R. Hunter, Oakley. Third, D. Bell, Beith.

PAIR PIEBALD FOR MEDAL.—Medal, A. Kelly.

PIEBALD (Yellow).—*Cock.*—First, J. Wilson, Galston. Second, D. Duncan, Carron. Third, W. Hunter, Kilbirnie. *Hens.*—First, A. Kelly. Second, R. Hunter. Third, W. Hunter.

PIEBALD (Buff).—First, R. Hunter. Second, A. Crawford, Johnstone. Third, W. Sunter, Paisley. *Hens.*—First, T. G. M'Lean, Glasgow. Second, G. Haddow, Kilwinning. Third, J. Mathers, Glasgow.

GOLDFINCH MULE. First and Second, J. M. Laker.

GOLDFINCH.—First, G. Haddow. Second, J. Crawford.

HOME OR FOREIGN.—First, H. C. Agnew. Second, M. Andrew, Paisley.

JUDGES.—*Poultry:* Messrs. W. Farquhar, Barrhead; R. E. C. Benton, Darnlee; H. Todd, Paisley; J. Holburn, Stewarton; J. Stevenson, M.D., Ardrossan; J. Redpath, Edinburgh; J. Crawford, St. Rollox; and J. Hunter, Greenock. *For Pigeons:* Messrs. J. H. Frame, Carluke, and J. Paton, Stewarton. *For Canary Birds, &c.:* Messrs. W. Taylor, Glasgow; W. Orr, Beith; J. Wren, Pollokshaws; A. Brown, Stewarton; W. White, Renfrew; M. Wilson, Paisley; D. Buchanan, Paisley; and J. White, Paisley.

BRISTOL AND CLIFTON POULTRY EXHIBITION.

No poultry show could have been better conducted than the one just named, although it was the first meeting of the Society. A very brief glance, however, over the names, as published, of the Committee, twelve in number, proves that the whole of its members are known as being among the most noted of our poultry breeders and exhibitors, and, consequently, well aware of every requisite to insure success. All of them seemed most willing to aid by their own personal supervision, and the result was, that a Show so attractive in its general arrangements is very rarely to be seen. Another most favourable feature connected with the Show cannot possibly be passed by without favourable mention—viz., the extraordinary suitability of the Clifton Rifle Drill Hall to the purposes of a poultry show; in fact, if built expressly for that end alone, it could not be improved. The great extent of the building, and the perfect light throughout the whole was most gratifying, and although 789 pens were exhibited, double that number at any future Exhibition could, if requisite, be accommodated.

As might be expected, the classes for Black *Spanish* were quite worthy of the fame which the neighbourhood has so long enjoyed, as producing the best fowls of this variety in the kingdom, Messrs. Rodbard, Jones, and Lane, taking the three prizes in the adult class in the order named, with extraordinarily well-shown birds. In Spanish chickens no less than thirty pens competed, all good; in fact, so excellent a competition was, perhaps, never before submitted to the decision of public arbitrators. The Judges themselves, in an addendum to the prize list, say "that Nos. 20, 23, 38, and 42 were the best four pens ever seen." They belonged respectively to Messrs. Parsley, Roué, Lane, and Jones, all residing in the locality. It was to Mr. Parsley's chickens that the silver cup for the best pen of Spanish was awarded. In *Dorkings*, Bristol Show stood well, Lady Holmesdale showing a pen of old ones, that, though so long well known, seem to stand out as vigorous and perfect as ever. It is a proof both of combined careful management and very strong natural constitution, when Dorkings of such extreme size and weight remain eligible for competition after so many exhibitions. The triumph of this extraordinary pen of birds was, perhaps, greater than even on any previous occasion, as they gained a triple honour; being first in their own class; taking the silver cup, value five guineas, for "the best pen of Dorkings," and, as a still higher achievement, a cup for the "best pen of poultry in the whole Show," given regardless alike of breed or age. It is but justice to say, this largest cup was decidedly the best ever allotted to poultry, and though at first announced in the schedule as being of only ten-guineas value, its real worth exceeded that amount by several pounds. Lady Holmesdale seems to have reserved the strength of her poultry-yard for this express occasion, by also taking the second prize for adults, likewise both first and second prizes for Dorking chickens. Mr. Lingwood took both first and second prizes for White Dorkings. In Buff *Cochins* the Show proved very good; Mr. Fenton taking precedence in old birds, Colonel Wortley was second, and Mr. Cattell third. In chickens Mr. Chase was first, winning also the Buff Cochin cup, closely run by Mr. Mapplebeck, who secured both the second and third positions. In White Cochins Mr. Chase obtained the first prizes in both classes, consequently the White Cochin cup also. This gentleman's birds were exhibited in excellent condition. In *Brahmas* Mr. Boyle, of Dublin, was the successful one, the silver Brahma cup finding its future home in the Sister Isle. In speaking of *Game* fowls the name of Mr. Fletcher, of Stoneclough, appears in unvarying repetition. As to the rivalry in these classes, however, it must not for a moment be supposed that the entries were few, for on the contrary they far exceeded in numbers the generality of shows, as evidenced by the fact that Class 18, for Black or Brown Reds, contained seventy-one entries. Never could Game fowls be shown in a condition more creditable to the exhibitor, and we may mention that it was this cup pen of Game fowls that ran so closely for the principal cup, that the Judges were some considerable time in giving the preference. Sir St. George Gore's first-prize single Black Red Game cock was a most excellent bird. All the *Hamburgh* classes were far better than of late, the cup pen being a glorious trio of Golden-spangled, the property of Mr. Hyde, of Ashton-under-Lyne. The *Polish* class was one of the very best in the Exhibition. Mr. Kelleway, of the Isle of Wight, gained the Bantam cup with an exquisitely beautiful pen of Duckwings; it was, perhaps, the most admired of any of the pens of fowls in the Show. It is long since any others so good were exhibited, although evidently identical with the late winners at Brighton. The Black *Bantams* were particularly good, and some extraordinarily good Booted Bantams were shown.

Mrs. Seamons, Sir St. George Gore, and Mr. Leech, as customary, took precedence for *Ducks*, *Geese*, and *Turkeys*, in all of which classes the Bristol Show was well filled.

The untiring attention shown by every member of the Committee to the welfare of the valuable collection itself, as well as to the comfort and convenience of every spectator, is worthy of all praise. One of Brindley's patent incubators was on the spot. It is evidently somewhat novel in the mode of applying the heat, but, unfortunately, at the time of our visit was not in full operation.

SPANISH (Black).—First and Cup, J. R. Rodbard, Aldwick Court, Wrington. Second, E. Jones, Clifton. Third, H. Lane, Bristol. Highly Commended, E. Jones; W. Roue, Bristol. Commended, R. Wright, Holloway Road, London. *Chickens.*—First and Cup, D. Parsley, Kingsdown, Bristol. Second, W. Roue. Third, H. Lane. Very Highly Commended, E. Jones. Highly Commended, S. Healing, Borough Mills, Tewkesbury; E. Jones; C. Bell, Kingsdown; T. Bamfield, Bristol; Hon. Miss D. Pennant, Penrhyn Castle, Bangor; H. Lane; W. Roue; J. Davey, jun., Town Mills, Taunton; A. Heath, Calne, Wilts; J. R. Rodbard. Commended, E. Jones; Hon. Miss D. Pennant.

DORKINGS (Coloured).—First and Second, Cup for Best Pen of Dorkings, and Cup for the Best Pen of any variety, Viscountess Holmesdale, Linton Park, Staplehurst, Kent. Third, G. W. Cooper, Andum, Cheshire. Commended, C. Smith, Durnford, Salisbury; Mrs. Hargreaves, Arberfield Hall, Reading. *Chickens.*—First and Second, Viscountess Holmesdale. Third, J. H. Wilson, St. Bees.

DORKINGS (White).—First and Second, H. Lingwood, Barking, Needham Market, Suffolk. Third, T. P. Edwards, Lyndhurst, Hants. Commended, Rev. G. F. Hodgson, North Petherton near Bridgwater.

COCHIN-CHINA (Buff and Cinnamon).—First, A. Fenton, Crimble Hall, near Rochdale. Second, Col. Stuart Wortley, Grove End Road, London. Third, J. Cattell, Birmingham. Highly Commended, H. Tomlinson, Birmingham; A. Fenton. *Chickens.*—First and Cup, R. Chase, Balsall Heath, Birmingham. Second and Third, H. Mapplebeck, Woodfield, Moseley, Birmingham. Highly Commended, A. Fenton. Commended, Miss J. Millward, Newton St. Loe, Bristol; Mrs. W. G. Burnall, Mount Hill.

COCHIN-CHINA (Brown and Partridge).—First and Cup, A. Fenton. Second, E. Tudman, Ash Grove, Whitchurch, Salop. Third, J. Stephens, Walsall. Commended, A. Fenton. *Chickens.*—First and Third, E. Tudman. Second, J. R. Rodbard. Highly Commended, A. Fenton.

COCHIN-CHINA (White).—First and Cup, R. Chase. Second, L. Samuels, Horfield, Bristol. Third, Rev. W. J. Mellor, Colwick Rectory, Nottingham. Highly Commended, Rev. F. Taylor, Keastwick, Kirkby-Lonsdale. Commended, J. H. Wilson; W. Zurhorst, Belville, Donnybrook, Dublin. *Chickens.*—First, R. Chase. Second, J. Gardiner, Bristol. Third, F. D. Johnson, Lozells, Birmingham. Highly Commended, E. C. Boville, Willington, Burton-on-Trent.

BRAHMAS (Dark).—First and Cup, R. W. Boyle, Bray, Wicklow. Second, F. Sabin, Birmingham. Third, Col. Stuart Wortley. *Chickens.*—First, L. Wright, Kingsdown, Bristol. Second, R. W. Boyle. Third, H. Lacy, Lacy House, near Hebden Bridge. Highly Commended, Mrs. Hargreaves.

BRAHMAS (Light).—First and Second, J. Pares, Postford, Guildford, Third, E. Pigeon, Lympstone, near Exeter. *Chickens.*—First and Second, J. Pares. Third, F. Crook, Forest Hill.

MALAY (Any variety).—First, J. C. Cooper, Cooper's Hill, Limerick. Second, Rev. A. G. Brooke, Ruyton XI. Towns, Salop. Third, J. Hinton, Hinton, near Bath.

CRÈVE CŒUR.—First, W. Blinkhorn, Waterdale, near St. Helen's, Lancashire. Second, J. C. Cooper. Third, Col. Stuart Wortley. Highly Commended, J. Walker, Haya Park, Knaresborough.

GAME (Black-breasted and other Reds).—First and Cup and Second, J. Fletcher, Stoneclough, near Manchester. Third, W. Dale, Weston-super-Mare. Highly Commended, S. Dupe, Evercreech, near Bath; Sir St. G. Gore, Bart., Hopton Hall, Wirksworth, Derbyshire. Commended, Rev. F. Watson, Messing, Kelvedon, Essex.

GAME (Duckwings and other Greys and Blues).—First and Second, J. Fletcher. Third, H. M. Julian, White Friar-gate-bridge, Hull. Highly Commended, W. Bradley, Severn Navigation, Worcester; W. W. Pyne, South Lancing, Sussex; S. Dupe. Commended, W. Dale.

GAME (Any other variety).—First, J. Fletcher. Second, Sir St. G. Gore, Bart. Third, C. Bulpin, Riverside, Bridgwater.

HAMBURGHS Golden-pencilled).—First, H. Beldon, Goitstock, Bingley, Yorkshire. Second and Third, F. Pittis, jun., Newport, I.W. Highly Commended, J. E. Powers, Biggleswade; H. Pickles, jun., Earby, near Skipton.

HAMBURGHS (Silver-pencilled).—First, H. Beldon. Second, H. Pickles, jun. Third, J. E. Powers. Highly Commended, H. Beldon.

HAMBURGHS (Golden-spangled).—First, and Cup for Best Pen of Hamburghs of any variety, W. A. Hyde, Hurst, Ashton-under-Lyne. Second, J. Buckley, Taunton, near Ashton-under-Lyne. Third, I. Davies, Harborne, near Birmingham. Highly Commended, Messrs. S. & R. Ashton, Mottram, near Manchester; J. Roe, Hadfield, Manchester.

HAMBURGHS (Silver-spangled).—First and Second, J. Fielding, Newchurch, near Manchester. Third, H Beldon.

HAMBURGHS (Black).—First, G. Lingard, jun., Selly Oak, Birmingham. Second, T. Fletcher, Commissioner's Office, Great Malvern. Third, H. Beldon.

POLISH (Any variety).—First, H. Beldon. Second, Sir St. G. Gore, Bart. Third, T. P. Edwards. Highly Commended, J. Hinton; J. Percivall, Harborne, Birmingham; H. Beldon; G. C. Adkins, The Lightwoods, near Birmingham; Sir St. G. Gore, Bart. Commended, T. P. Edwards.

ANY OTHER DISTINCT VARIETY.—First, S. A. Wylke, East Mouseley, Surrey. Second, H. Lewerthy, Newport, Barnstaple. Third, R. H. Nicholas, Malpas, near Newport. Highly Commended, H. M. Maynard, Holmewood, Ryde, I.W.; P. P. Cother, Salisbury; Col. Stuart Wortley; J. C. Cooper; Mrs. S. Northcote, Upton Pyne, near Exeter.

GAME BANTAMS (Black-breasted and other Reds).—First and Second, H. Shumack, Southwell, Notts. Third, C. Harris, Maindee Park, near Newport, Mon. Highly Commended, G. Griggs, Oaklands, near Romford, Essex; Rev. A. K. Cornwall, Bencombe, Dursley; E. Joynson, Liscard, Cheshire; R. Swift, Southwell, Notts; Miss E A. Crawford, Farnsfield, Southwell; Sir St. G. Gore, Bart.; A. Fenton. Commended, S. Lang, jun., Barrow Gurney, near Bristol.

GAME BANTAMS (Any other variety).—First, and Cup for Best Pen of Bantams of any variety, J. W. Kelleway, Merston, I.W. Second, W. S. Forrest, Eagle Cliff, Greenhithe, Kent. Third, Mrs. Saltmarsh, Chelmsford. Highly Commended, Misses R and E. Todder, Little Carlton, near Newark, Notts. Commended, H. Dowsett, Pleshey, Chelmsford; Sir St. G. Gore, Bart.

BANTAMS (Gold and Silver Sebright).—First, M. Leno, Dunstable. Second and Third, U Spary, Dunstable. Highly Commended, Messrs. S. and R. Ashton; M. Leno; Rev. G. S. Cruwys, Tiverton, Devon.

BANTAMS (Black, clean-legged).—First, E. Cambridge, Stoke's Croft Road, Bristol. Second and Third, H. M. Maynard. Highly Commended, Mrs. H. Freke, Highworth, Wilts; E. Cambridge.

BANTAMS (White and any other variety).—First, G. Griggs. Second, J. R. Jessop, Beverley Road, Hull. Third, L. Samuels. Highly Commended, W. Osmond, Dorchester.

DUCKS (White Aylesbury).—First, Mrs. M. Seamons, Hartwell, Aylesbury, Bucks. Second, H. Jones, Dinton, Aylesbury. Highly Commended, J. Logan, Maindee House, near Newport, Mon.; S. Lang, jun.; Mrs. M. Seamons.

DUCKS (Rouen).—First, E. Leech, Rochdale. Second, C. A. Nichols, Yatton, near Bristol. Highly Commended, W. Peach, Tockington, Gloucestershire; G. M. Hulbert, Perott Brook, Cirencester; J. R. Rodbard.

DUCKS (Any other variety).—First, Sir St. G. Gore, Bart. Second, A. Fenton. Highly Commended, T. C. Harrison, Beverley Road, Hull; L. Samuels; G. W. Harrison, Spalding.

GEESE (Any variety).—First, Mrs. M. Seamons. Second, A. Sperrin, Bitton. Highly Commended, Mrs. Laver, Hewish, near Congresbury, Bristol; Mrs. Matthews, Aredunnock, near Usk, Mon.; A. Sperrin; J. C. Cooper.

TURKEYS (Any variety).—First, E. Leech. Second, S. Lang, jun. Highly Commended, B Sherratt, Taynton, near Gloucester; J. Logan. Commended, C. Edwards, Wrington, Somerset; J. C. Cooper.

SINGLE COCKS.

SPANISH (Black).—First and Cup, T. J. Perry, Bristol. Second, W. Rone. Very Highly Commended, T. Cliff, Hanley, Staffordshire. Highly Commended, E. Jones; R. Wright; H Lane. Commended, T Bamfield.

DORKING (Any variety).—First, H. Beldon. Second, J. C. Cooper. Highly Commended, S Onley, Cheltenham; Hon. Miss D. Pennant; J. Fox, St. Bees, Cumberland; L. Patton, Taunton; F. Porlett, Great Baddow, Chelmsford; B. Johnson, Langley Burrell, near Chippenham. Commended, Rev. E. Cadogan, Walton Parsonage, Warwick.

COCHIN-CHINA (Buff and Cinnamon).—First, Col. Stuart Wortley. Second, H. Mapplebeck. Highly Commended, H. Mapplebeck. Commended, Hon. Miss D. Pennant.

COCHIN-CHINA (Any other variety).—First, Messrs. Keal & Phillips, Westbury-on-Trym. Second, A. Fenton.

GAME (Black-breasted and other Reds).—First, Sir St. G. Gore, Bart. Second, J. Fletcher. Highly Commended, T. Dyson, Halifax. Commended, H. Thompson, Hilmarton, Calne, Wilts; Rev. G. S. Cruwys.

GAME (Any other variety).—First and Second, Sir St. G. Gore, Bart.

HAMBURGHS (Spangled).—First, W. Barrstow, Ferncliff, Bingley, Yorkshire. Second, I. Davies.

HAMBURGHS (Pencilled).—First, H. Beldon. Second, H. Pickles, jun.

BRAHMA POOTRA (Any variety).—First, R. W. Boyle. Second, E Joynson. Highly Commended, L. Wright. Commended, C. S. Lambert, Kingswood, Bristol.

GAME BANTAMS (Any variety).—First, Sir St. G. Gore, Bart. Second, A. Fenton. Highly Commended, Sir St. G Gore, Bart.; A. Fenton.

BANTAMS (Any other variety).—First, J. W. Morris, Rochdale, Lancashire. Second, S. Lang, jun., Barrow Gurney, near Bristol. Highly Commended, Rev. F. Tearle, Gazeley Vicarage, Newmarket. Commended, M. Leno.

Mr. Edward Hewitt, of Sparkbrook, Birmingham, and Mr. John Douglas, of Clumber Park, Notts, officiated as Judges.

WENTWORTH POULTRY EXHIBITION.

THIS Exhibition was held on Saturday, the 29th, and Monday, the 31st of December, and it would be an injustice were we not to accord our highest praise to the management of the Committee. Every effort was made to insure success, and this end was duly achieved by the collection of a show of poultry that would have done credit to any county of the kingdom. The Riding School, in which the Show was held, is a building that is most peculiarly well adapted to the purposes of a poultry show; in fact, not thus less eligible than for the uses for which it was originally intended—as a Riding School. The only drawback to the whole proceedings was the circumstance that the Committee, having a long time ago engaged the pens of Messrs. Turner, of Sheffield, were through a delay in transit from the Limerick Show, compelled to adopt the most speedy measures to have everything ready for their own meeting, and fortunately having a large number of pens remaining from former meetings, they at once raised about the half of the number of the pens wanted from resources directly at command. As Masborough is so near to Sheffield, we would suggest to the Messrs. Turner the propriety of having at instant disposal a number of extra pens on hand, to meet every emergency for the future, as any want of fulfilment of engagement is a matter of the most serious import to poultry committees, thus thrown out of gear in arrangements over which they cannot possibly have any command. As the income per annum by per-centage on outlay from letting these pens is so favourable to the Messrs. Turner, we do not for a moment doubt this friendly hint on future management will be duly attended to, more particularly as the pens when they arrived were placed in the background unused, and at that hour unwanted.

The *Dorkings* constituted a collection of unusual excellence, although we regretted to see many otherwise most excellent pens with the spurs fixed outside the legs in one or two of the inmates, a very fatal defect. The Dorkings, as a whole, were a most favourable feature, but numbers of the chickens were thrown out by the radical malformation just alluded to. Breeders of Dorkings cannot be too careful on this point. The *Cochins* were most creditable, as were also the *Brahmas* It appears that although the last pens put up at Wentworth were of these classes, they stood the additional trial without any difficulty. The *Game* generally were of high repute, and the Hon. W. C. Fitzwilliam's Brown Red Game cock seemed alike capable of testing his individual superiority in the exhibition or the cock-pit. A bird in more unexceptionable condition has been rarely exhibited. The *Spanish* classes were, undoubtedly, very good, although we saw, with regret, many specimens that from being the first-rates of their day, were, by age and over-exhibition, rendered only fit to be put aside as castaways. The *Hamburghs* were, as expected, generally good; and the *Polands* so good a class that every pen, though unsuccessful in prizetaking, was highly commended. In truth, it was the best Poland class seen anywhere for years past. Although the *Game Bantams* wanted condition most sadly, the class for the "extra variety of Bantams," proved one of the gems of the Show; capital Cochin Bantams, Japanese Bantams (both Mottled and White) of extraordinarily good quality, Booted Bantams, and Golden and Silver-laced Sebrights, being entered here abundantly.

In *Ducks*, though somewhat unusually, Aylesbury and Rouens competed in the same class. Aylesburys had, undoubtedly, the advantage, and were shown in a condition that could hardly have been complained of, even by the most critical exhibitor.

The French Fowls were shown in large numbers, and, perhaps, never were two pens of La Flèche fowls exhibited so evenly matched for prizetaking. Both were the property of the Hon. W. H. Fitzwilliam, and the slightest alteration in condition must always tell favourably with them as to their position in the prize list.

Wentworth Woodhouse Park, a favourite resort in the locality, was not neglected at this meeting; the attendance was good, and the weather most favourable; nor can we omit to mention that the great care bestowed on the poultry merits our highest praise. The efforts, also, of Mr. H. Potter, the Hon. Sec. of the Show, realised all it so well deserved—unanimous approbation.

DORKINGS.—First, Hon. W. H. W. Fitzwilliam, Wentworth Woodhouse. Second, W. Harvey, Bank Street, Sheffield. Highly Commended, G. W. Chambers, Clough House, Rotherham; Hon. E. D. Pennant, Penrhyn Castle. Commended, Hon. F. C. H. Hawke, Wormersley Park, Pontefract; Lady C. W. Fitzwilliam, Harrowden House, Wellingborough. *Chickens.*—First, M. Brooksbank, Manchester. Second, Rev. G. C. Stenning, East Grinstead. Highly Commended, J. White, Warlaby, Northallerton.

COCHINS.—First, R. White, Broomhall Park, Sheffield. Second, W. Fenton, Crimble Hall, Rochdale. Highly Commended, W. Fenton; W. Dawson, Hopton Mirfield; W. Harvey. Commended, Hon. E. D. Pennant; W. Wood, Sheffield. *Chickens.*—First, W. Fenton. Second, R. White. Highly Commended, W. Fenton.

BRAHMAS.—First, R. W. Boyle, Galtrim House, Bray, Co. Wicklow. Second, W. Harvey. Highly Commended, W. Whiteley, East Bank, Sheffield; F. Powell, Knaresborough; J. K. Fowler, Prehendal Farm, Aylesbury. Commended, E. Sheerman, Springfield, Chelmsford. *Chickens.*—First, R. W. Boyle. Second, J. K. Fowler. Highly Commended, G. W. Chambers; F. Powell; J F. Newton, Kirby-in-Cleveland; M. Brooksbank. Commended, Hon. F. C. H. Hawke; Mrs. Newman, Worsbro', Barnsley.

GAME (Reds).—First, Earl Fitzwilliam, Wentworth Woodhouse. Second, W. J. Cope, Barnsley. Highly Commended, R. Butcher, Cresswell, Chesterfield; J. B. Hepworth, Hatfield, Doncaster; C. Chaloner, Steetley, Whitewell, Chesterfield. *Chickens.*—First, C. Chaloner. Second, F. Sales, Market Place, Crowle. Highly Commended, W. Cox, Brailsford Hall, Derby. Commended, E. Aykroyd, Girlington Road, Bradford.

GAME (Any other variety).—First, H. Snowden, Great Horton, Bradford, (Duckwing). Second, W. J. Cope (Duckwing). Highly Commended, R. Butcher (Piles). *Chickens.*—First, J. Cope (Duckwing). Second, Rev. G. C. Stenning (Duckwing). Commended, C. Chaloner.

SPANISH.—First, Messrs. Burch & Boulter, Sheffield. Second, J. B. Hartley, Roe Acre House, Heywood, Manchester. Highly Commended, W. Harvey; J. Thresh, Bradford. Commended, Rev. W. J. Mellor, Colwick Rectory, Nottingham. *Chickens.*—First, Hon. E. D. Pennant. Second, Messrs. Burch & Boulter. Highly Commended, J. Thresh.

HAMBURGHS (Silver-pencilled).—First, W. Harvey. Second, I. J. Harrison, Smyleton Park, Oxenholm. Highly Commended, T. J. Saltmarsh

Chelmsford; B. Heaton, Bingley, Yorkshire; I. J. Harrison. Commended, W. Cox.

Hamburghs (Golden-pencilled).—First, T. Crookes, Owlerton. Second, W. Harvey. Commended, J. Crookes.

Hamburghs (Silver-spangled).—First, W. Harvey. Second, J. Crookes. Commended, Hon. W. C. W. Fitzwilliam.

Hamburghs (Golden-spangled).—First, G. Haigh, Holmfirth. Second, W. Harvey. Highly Commended, J. Roe, Hadfield, Manchester.

Polands.—First, R. Charlesworth, Brooks' Bar, Manchester. Second, Mrs. Procter, Hutt Street, Hull. Highly Commended, W. Silvester, Springwood House, Sheffield; J. Longley, Penistone; Mrs. Proctor; W. Harvey.

Any other Variety not Previously Mentioned.—First, Hon. W. H. W. Fitzwilliam (La Flèche). Second, Hon. W. C. W. Fitzwilliam, Wentworth Woodhouse (La Flèche). Highly Commended, Lady M. Thompson, Sheriff Hutton Park, York (Crève Cœur); H. Saville, Rufford Abbey, Ollerton (Black Hamburghs); J. Elgar, Osmanthorpe, Newark (Houdan).

Game Bantams.—First, R. Charlesworth. Second, Rev. W. J. Mellor. Highly Commended, J. Parkin, Clay Cross; W. Parker, Clay Cross; J. Ewing, Tufton, Chesterfield; R. Bentley, Finningley Park, Bawtry; W. Fenton.

Bantams (Any other variety).—First, W. Harvey. Second, S. S. Mossop, Long Sutton, Lincolnshire. Extra Second, R. Bentley. Highly Commended, Messrs. S. & R. Ashton, Mottram; W. Parker; Lady C. W. Fitzwilliam; W. J. Cope; H. Saville. Commended, Mrs. Saltmarsh, Chelmsford.

Ducks (Aylesbury or Rouen).—First, Hon. W. H. W. Fitzwilliam (Aylesbury). Second, Hon. F. C. H. Hawke (Rouen). Highly Commended, Messrs. Burton & Traviss, Thurgoland Bank, Sheffield; F. G. Godwin (Ronen); Hon. W. H. W. Fitzwilliam (Aylesbury); J. K. Fowler (Aylesbury). Commended, Lady M. Thompson (Aylesbury); F. Powell (Rouen); W. Dransfield (Rouen); W. Clarke, Wentworth (Aylesbury).

Selling Class (Any variety).—First, Hon. W. H. W. Fitzwilliam (Crève Cœurs). Second, J. Thornily, Hadfield, Manchester (Cochins). Highly Commended, H. Saville (White Call); W. Dransfield (Dorkings); Hon. W. C. W. Fitzwilliam (Silver-spangled Hamburghs).

SWEEPSTAKES FOR SINGLE COCKS.

Game.—First, C. Chaloner. Second, G. Wostenholme, Exchange Street, Sheffield. Highly Commended, C. Turner, Carlisle Street, Sheffield. Commended, W. J. Cope. *Cockerel.*—First, W. J. Cope. Second, F. Sales. Commended, G. Wostenholme.

Game Bantam.—First, F. S. Roy, Nenthorn, Kelso. Second, R. Charlesworth. Commended, R. Swift, Southwell, Notts.

Game (Undubbed).—Prize, W. Cox. Commended, C. E. Rhodes, Car House, Rotherham; C. Chaloner.

The Arbitrator was Edward Hewitt, Esq., of Eden Cottage, Sparkbrook, Birmingham.

LANGHOLM POULTRY SHOW.

The Exhibition of the Eskdale Society took place on the 1st and 2nd inst., and the following prizes were awarded:—

Game (Any colour).—First, J. H. Wilson, St. Bees. Second, J. Brough, Carlisle. Third, A. Thomson, Carlisle. Highly Commended, J. Brough; J. Hardie.

Game (Black or Brown-breasted Reds).—First, A. Thomson, Harraby Green. Second, G. Bell, Wigton. *Chickens.*—First, G. Dobson, Longtown, Second, A. Thomson.

Game (Duckwings or Piles).—First, A. Thomson. Second, J. Brough. *Chickens.*—Second, J. Brough (Lemon Pile).

Spanish.—First, J. Huesh, Bradford. Second, W. Paterson, Langholm. *Chickens.*—First, W. Paterson. Second, J. Hardie. Highly Commended, W. Paterson; J. Strong, Carlisle. Commended, A. Ballantyne, New Langholm.

Dorking (Silver).—First, J. Hardie. Second and Highly Commended, T. L. Jackson, Bush. *Chickens.*—First and Second, J. Hardie. Highly Commended, J. H. Wilson.

Dorkings (Dark).—First, Miss Malcolm, Milnholm. Second, J. Hardie. Highly Commended, T. L. Jackson. *Chickens.*—First, R. Reed, Moat. Second, J. Hardie. Highly Commended, D. Gellatly, Meigle.

Hamburghs (Golden-spangled).—First, A. Hatelie, Selkirk. Second, S. Hyslop, Langholm. *Chickens.*—First, W. Blackstock, Corriecommon. Second, J. Long, Longtown. Highly Commended, J. H. Wilson.

Hamburghs (Golden-pencilled).—First, W. Bowe, Carlisle. Second, R. Burrow. *Chickens.*—First and Second, R. Burrow. Highly Commended, J. Hardie.

Hamburghs (Silver-spangled).—Prize, W. Bowe. *Chickens.*—First and Second, J. Hargraves, Carlisle. Highly Commended, W. Davey, Langholm. Commended, G. Macmilan, Jedburgh.

Hamburghs (Silver-pencilled).—First, T. Harrison, Singleton Park. Second, J. Musgrave, Longtown. *Chickens.*—First, J. Musgrave. Second, H. Greenwood, Bradford.

Cochin-Chinas.—First, Mrs. W. Ford, Harden Green (White). Second, Messrs. Bowman & Fearon, Whitehaven. Highly Commended, J. Hardie (Buff). Commended, W. R. Park, Abbotts Meadow.

Brahma Pootra.—First, Messrs. Bowman & Fearon. Second, Miss M. Jardine, Albie Hill.

Any other Different Breed.—Second, W. R. Park (Crève Cœur). Highly Commended, R. Plendericith, Longtown.

Game Bantams (Black or Brown-breasted Reds.)—First, J. Hervey, Jedburgh. Second, A. Thomson. Third, H. Nicholson, Whitehaven.

Game Bantams (Duckwing or Piles).— First, W. Easton, Jedburgh (Duckwings). Second, D. Little, Broomholm. Third, J. Lunn, Jedburgh.

Any other Variety of Fancy Bantams.—First, J. A. Robinson, Sunderland. Second, T. Little, Netherby Gardens. Third, R. Burrow. Highly Commended, J. Wallas, High Moor, Wigton.

Turkeys.—First, J. Hardie. Second, Mrs. Jackson, Bush, Langholm. Highly Commended, R. Reed; T. L. Jackson. Commended, Miss Maxwell, Harlewhill. *Poults.*—First, T. L. Jackson. Second, J. Hardie. Very Highly Commended, Miss Malcolm, Milnholm, Langholm. Highly Commended, R. Reed; J. Hardie.

Geese.—First and Second, J. Hardie. Highly Commended, — Dickson, Lokerbie.

Ducks (Aylesbury).—First, T. Paterson, jun., Melrose. Second, J. Steel Kelso. Highly Commended, W. Macadam, Priorslynn; J. Hardie.

Ducks (Rouen).—First and Second, J. Hardie. Highly Commended, A. Warwick, Woodhead.

Ducks (Any other variety).—First, J. R. Jessop, Beverley Road, Hull. Second, Miss Bell, Billholm. Highly Commended, T. J. Harrison; J. R. Paterson.

COTTAGERS' CLASS.

Any Breed.—First, W. Urquhart, jun. (Dorkings). Second, A. Ballantyne (Spanish). Third, J. Laidlaw (Spanish). Highly Commended, W. Bole (Hamburgh); A. Rea (Dorkings); J. Corrie (Game).

Any Breed.—First, R. Latimer, Forgebraehead. Second, Miss C. Graham, Blisspath. Third, Mrs. Armstrong, Kirkton. Highly Commended, C. Beattie, Bush Cottage; Mrs. Harvey, Sorbie Cottage. Commended, W. Gordon Milnholm; T. Irving.

Selling Class.—First, R. Burrows. Second, J. Brough. Highly Commended, A. Thomson; G. Mackie, Purdoms Crook; T. L. Jackson.

Single Cock.—Highly Commended, R. Bell (Wild Drake). Commended, J. Laidlaw (Brahma Pootra); S. Hyslop (Hamburgh); T. L. Jackson (Indian Drake).

PIGEONS.

Choppers.—First, J. A. Robinson. Second, W. Cheyne, Selkirk. Highly Commended, A. Thomson; J. Campbell, Langholm Distillery.

Jacobins.—First, R. Thomson, Kendal. Second, T. C. Taylor, Middlesborough.

Fantails.—First, W. R. Park. Second, T. C. Taylor.

Carriers.—First, A. Thomson. Second, T. C. Taylor.

Barbs.—First, R. Thompson. Second, J. A. Robinson. Highly Commended, A. Thomson.

Nuns.—First, R. Paterson, Melrose. Second, R. Irving, Langholm. Highly Commended, A. Thomson; T. Paterson, jun.

Turbits.—First, R. Thomson. Second, W. R. Park. Highly Commended, A. Ormiston, Kelso.

Any other Variety.—First, A. Thomson. Second, W. R. Park. Highly Commended, A. Thomson; J. Campbell. Commended, F. Waitt, Birmingham; T. Taylor.

Selling Class.—First, W. R. Park (Fantails). Second, J. Campbell. Highly Commended, R. Paterson (Turbits).

CANARIES.

Scotch Fancy (Yellow Don).—*Cock.*—First, H. M'Dougal, Edinburgh. Second, R. Ballantyne. *Hen.*—First, H. M'Dougal. Second, W. Tinline, Galashiels.

Scotch Fancy (Buff Don).—*Cock.*—First, H. M'Dougal. Second, J. R. Thomson. *Hen.*—First, H. M'Dougal. Second, R. Ballantyne.

Belgian (Yellow).—*Cock.*—First, H. Carlyle, Carlisle. Second, W. Tinline. *Hen.*—Second, H. Carlyle.

Belgian (Buff).—*Cock.*—First, H. Carlyle. Second, A. Beattie. *Hen.*—First, W. Tinline. Second, W. Macadam, Priorslynn.

Yellow Flecked Fancy.—*Cock.*—First, J. Cleghorn, Galashiels. Second, T. Darling, Hawick. *Hen.*—Second, J. Dalgliesh.

Buff Flecked Fancy.—*Cock.*—First, R. Paterson. Second, J. Hope. *Hen.*—First, W. Tinline. Second, W. Balmer, Hawick.

GOLDFINCH MULES.

Yellow Flecked.—*Cock.*—Prize, R. Graham, Rowanburn.

Buff Flecked.—*Cock.*—First, J. C. Wilson, Langholm. Second, R. Graham.

Yellow Common.—*Cock.*—Prize, R. Graham. *Hen.*—Second, R. Graham.

Buff Common.—*Cock.*—Second, R. Graham. *Hen.*—First, W. Balmer, Bawick. Second, W. Morrison, Langholm.

Yellow Flecked Common.—*Cock.*—First, W. Hotson, Milnholm. Second, W. Morrison. *Hen.*—First and Second, W. Hotson.

Buff Flecked Common.—*Cock.*—Second, W. Clark, Langholm. *Hen.*—Second, J. Hope.

Goldfinch.—*Cock.*—First, R. Graham. Second, W. Hotson.

ALSTON POULTRY SHOW.

This Exhibition was held on the 22nd of December, 1866, in the Town Hall, where some capital pens of birds were exhibited, especially in the *Game, Spanish, and Hamburgh classes.*

Game (Black-breasted and other Reds).—First, J. Haldon, jun., Alston. Second, J. Stephenson, Nenthead. *Chickens.*—First, Walton & Gray, Annatwalls. Second, J. Haldon, jun.

Game (Any other variety).—First, G. Wilson, Kirkoswald. Second, Millican & Brown, Nenthead. *Chickens.*—First, G. Wilson. Second, E. Armstrong, Randal, Holme.

Dorkings.—First, W. Walton, Cocklake. Second, T. Bowes, Kirkoswald. *Chickens.*—Prize, G. Graham, Garrigill.

Spanish.—First, T. Storey, Alston. Second, J. Jopling, Leadgate. *Chickens.*—First, W. Arthur, Haltwhistle. Second, T. Storey.

Hamburghs (Gold-pencilled or spangled).—First, T. Richardson Goatley Hill. Second, T. Greenop, Renwick. *Chickens.*—First, Walton and Rutherford, Green Ends. Second, J. Dryden, Alston.

Hamburghs (Silver-pencilled or spangled.—First, Walton & Rutherford. Second, Miss Friend, Harbut Lodge. *Chickens.*—First, J. Stephenson, Nenthead. Second, Walton & Rutherford.

Cochin-China.—First and Second, J. Dryden.

Polish.—First, Walton & Rutherford. Second, Millican & Brown.

Bantams.—First, F. Clementson, Alston. Second, T. Bowes.

Any other Pure Breed.—First, J. Dryden (Brahma Pootra). Second, T. Peart, Garrigill.

Duck (Aylesbury).—First W. Lowry, Featherstone Station. Second, J. & J. Kindred, Bailes. *Duckling.*—First and Second, Miss Friend.

Duck (Rouen).—First, J. Thompson, Sun Inn, Haltwhistle. Second, I. Walton, Brownside House. *Duckling.*—First, G. Rutherford, Nenthead.

Extra stock.—*Goose.*—First, J. Thompson. Second, I. Walton.—*Fowls.*—First and Second, J. Dryden. *Rabbits.*—First, Master H. James, Glarghyll Hall.

Canary (Belgian).—Prize, J. Millican, Alston.

Canary (Yellow and Buff).—First, J. Stephenson. Second, Millican and Brown.

Canary (Yellow and Buff marked).—First, R. Walton, Nenthead. Second, W. Bell, Alstyn.

Goldfinch Mule.—Prize, Millican & Brown.

Mr. Trotter, of South Acomb, was Judge of poultry, and Mr. Thomas Richardson, of Kirkoswald, made the awards for Canaries.

DUMFRIES AND MAXWELLTOWN ORNITHOLOGICAL SOCIETY'S EXHIBITION.

The eighth annual Exhibition of Poultry, Pigeons, Canaries, &c., of this Society, was held in the Hall of the Mechanics' Institute, on December 31st and January 1st and 2nd. The various birds, &c., were placed on the forenoon of the 31st ult., but as some pens did not arrive by railway till nearly one o'clock, the Judges could not commence their labours till after that hour. A very great improvement on previous shows was that pens were provided for all the poultry, except in the Bantam classes.

The Show was decidedly the best that has taken place since the Society was instituted. The show of poultry was much larger than last year; total entries 385.

Of *Game* fowls there was a splendid show of Black Reds and other Reds. There was a smaller show of Duckwings and other Greys, but the class in both departments was very good. There was a smaller show of *Spanish* than last year. The first prize in the adult class went to a very superior pen. The *Dorkings* were numerously represented. Miss M. A. Johnstone, Terregles Gardens, gained the first prize with a very choice pen, which received the first prize last year as young birds. They have never been equalled at any preceding show. The *Hamburghs*, both Golden and Silver varieties, mustered in great force; and there were many very beautiful pens. Of *Brahma Pootras* there was an excellent show.

The *Ducks* were more numerous than last year, and the whole of the pens were very good. Only two pens of *Geese* were shown; the prize birds were pure white, and were of large size and handsome shape—they were universally admired. The other pair was grey; they were larger than the white, and were very fine specimens. The *Turkeys* were scarcely equal to those of some former shows. *Bantams* were not so numerous as last year.

Pigeons were also fewer in number than last year, but there were some beautiful Doves exhibited.

The arrangements reflected great credit on the indefatigable Secretary, Mr. John Maxwell, and the members of the Committee.

Game (Black Reds and other Reds and Blues).—First and Second, W. D. Dickson, Carron Croft. Highly Commended, T. Taylor, Riccarton, Kilmarnock. *Chickens.*—First and Medal, J. Carr, Longtown. Second, W. D. Dickson. Highly Commended, W. Bowie. Commended, R. Kerr.

Duckwings and other Greys.—First, J. Davidson, Citadel Row, Carlisle. Second, C. Graham, Dumfries. Highly Commended, J. Biggar, Gateside-of-Trench. *Chickens.*—First, J. Harding, Maxwelltown. Third, T. Hill, Collin. Highly Commended, M. Wells, Collin.

Spanish (Black).—First, Miss Biggar, Braes House, Ecclefechan. Second, J. Thomson, Cocklicks, Annan. *Chickens.*—First and Medal, Miss Biggar. Second, R. J. Linton, Kirkmahoe.

Dorkings.—First and Medal, Miss M. A. Johnstone, Terregles Gardens. Second, W. F. H. Arundell, Barjarg Tower. Highly Commended, J. Pool, Croftheads, Annan; J. M'Kenzie, Barnhill. *Chickens.*—First, Miss M. Holm, Hillhead. Second, W. F. H. Arundell. Highly Commended, Mrs. Corrie, Heithat Hill, Lockerbie; Miss A. J. Douglas, Lockerbie House. Commended, Miss M. A. Johnstone.

Cochin-China (Any colour).—First, Miss Biggar. Second, W. Cowan, Clarancefield. Highly Commended, A. Reid, Newtoureid. *Chickens.*—First, Lady J. J. Douglas, Lokerbie House. Second, Miss Biggar. Highly Commended, Mrs. Mackie, Ernespie.

Hamburgh (Golden-spangled).—First and Medal, Mrs. Corrie. Second, T. Musgrove, Longtown. Highly Commended, J. Richardson, Lockerbie; A. M'Lean, Ruthwell. *Chickens.*—First, Miss Biggar. Second, H. Currie, Ardrossan. Highly Commended, Mrs. Corrie; R. Kerr.

Hamburgh Golden-pencilled.—First, R. Burrow, Longtown. Second, J. Ramsay, Carnsalloch. Commended, J. Mallinson, Dalbeattie. *Chickens.*—First, W. Bowie, Carlisle. Second, T. Musgrove. Highly Commended, W. Wallace, Kirkmahoe. Commended, T. Johnstone, Waterside.

Hamburgh (Silver spangled).—First, J. Hunter, Gatelawbridge. Second, J. Hutchison, Townhead, Mouswald. Commended, R. Chrystie, Dumfries. *Chickens.*—First and Medal, A. M'Lachlan, Thornhill. Second, Mrs. Deans, Drumlanrig Castle. Highly Commended, Mise Ross, Springfield, Applegirth. Commended, R. Kerr.

Hamburgh (Silver-pencilled).—First, J. Musgrove. Second, J. Thomson, Nethermill, Kirkmichael. *Chickens.*—First, N. Wilson, Croys. Second, R. Hannay, Tarff Bridge. Commended, J. Musgrove.

Brahma Pootras.—First, Mrs. Waugh, Castlehill, Lochmaben. Second, Mrs. Greig, Kirkpatrick, Durham. *Chickens.*—First, Mrs. Gordon, Culvennan. Second, W. W. Anderson, Chapel Moffat. Highly Commended, Mrs. Gordon.

Any other Variety.—First and Second, Mrs. Gordon (Houdan, Crève Cœur).

Selling Class.—First, Miss Biggar (Black Spanish). Second, T. Maxwell, Allanton Mill (Dorkings).

Bantams (Golden and Silver-laced).—First, Miss Johnstone. Second, W. W. Anderson.

Bantams (Black).—First and Medal, R. Murray, Maxwelltown. Second R. Watts, Craigs.

Bantams (White).—First, W. Teenan, Lochside. Second, J. Maxwell, Allanton Mill. Commended, H. Robinson, Riccarton, Kilmarnock.

Game Bantams Black Reds and other Reds.—First, C. Harper, Thornhill. Second, T. Maxwell. Commended, R. Coltart, Dumfries.

Game (Duckwings and other Greys).—First, T. Maxwell. Second, R. Hope, Dumfries.

Any other Variety.—First, J. Palmer, Maxwelltown. Second, A. Andersen, Ryedale.

Ducks (Aylesbury).—First, Miss A. J. Douglas. Second, T. Johnstone, Waterside. Commended, Mrs. Gordon.

Ducks (Rouen).—First, Mrs. Thomson. Second, J. Boyd, Southwick.

Geese (Any variety).—First, J. Brown, Ingleston. Second, J. Pool.

Turkeys (Any variety).—First, Mrs. Henderson. Second, Mrs. H. Wilson, Langholm.

Pigeons.—*Tumblers* (Short-faced).—First, J. Sharp, Johnstone. Second and Commended, R. Henderson, Maxwelltown. *Common.*—First, J. Sharp. Second, J. Love, Dumfries. Commended, J. Kennedy, Dumfries. *Carriers.*—First, J. Sharp. Second, T. Maxwell. *Powters.*—Prize, J. Sharp. *Fantails.*—First, R. Maisie, Maxwelltown. Second, A. Easton, Lochanhead. *Any other Distinct Breed.*—First, J. Sharp, (Black Magpies). Second, J. Thomson (Earbs). Commended, C. Harper (Trumpeters).

CANARIES.

Scotch Fancy (Yellow).—*Cocks.*—First, Second, and Medal, J. Harding, Maxwelltown. Third, J. Thorpe, Dumfries. *Hens.*—First and Third, J. Harding. Second, J. Thorpe.

Scotch Fancy (Buff).—*Cocks*—First, J. Harding. Second and Third, J. Thorpe. *Hens.*—First, J. Thorpe. Second, J. Harding. Third, J. M'Quhae, Maxwelltown.

Piebald (Yellow).—*Cocks*—First, Third, and Medal, J. Law, Lockerbie. Second, J. Thorpe. *Hens*—First, J. Law. Second and Third, J. Thorpe.

Piebald (Buff)—*Cocks*—First, J. Law. Second, J. Thorpe. Third, R. M'Cubbin, Annan. *Hens.*—First, J. Thorpe. Second, J. Law. Third, J. Little, Dumfries.

Belgian (Yellow or Buff)—First, J. Tweedie, Lochmaben. Second, T. Whitaker, Lochmaben. Third, J. Mallinson, Dalbeattie. *Hens.*—First and Third, T. Whitaker. Second, J. Mallinson.

Goldfinch Mules (Yellow).—First, A. K. Herries, Dumfries. Second, J. Kirk, Dumfries.

Goldfinch Mules (Buff).—First, J. Law. Second and Third, J. Harding, Maxwelltown.

Goldfinch.—First, D. Aitkinson. Second, C. Grieve, Dumfries. Third, J. Wilson, Dumfries.

Foreign Birds.—*Parrot, any colour.*—Prize, W. Lawson, Dumfries. *Foreign, any variety.*—First, J. Armstrong, S.C.A. (Love Birds). *Rarest Birds of any variety.*—Prize, J. M'Criric, S.C.A. (Cock of the North).

Judges.—*Poultry and Pigeons:* James Stevens, Esq., M.D., Ardrossan; Mr. James Paton, Stewarton. *Canaries and Foreign Birds:* Mr. G. Grant, Paisley; Mr. G. Crawford, Beith.

INCUBATOR MANAGEMENT.

I agree with your correspondent "Investigator" that it would be most useful if those interested in the artificial hatching of eggs would compare notes through your Journal. The subject is now being much inquired into, and I am satisfied it will not be long before artificial incubation can be adopted with the certainty of a successful and profitable result. I have for a considerable time devoted much attention to the subject, and the results of my experiments have been considered very satisfactory; but I cannot myself feel satisfied until with certainty I hatch every good egg that is placed in the incubator, and in a properly constructed machine this ought to be a certainty.

"Investigator" is mistaken in supposing that a temperature of 110° is fatal to the embryo life of chicks; this I know by actual experience. In August last I started my incubator towards evening, and finding about 10 P.M. the temperature had continued gradually rising until it had reached 110°, I lowered the gas to reduce the heat, but, as it turned out, not sufficiently, for on looking after it at 5 A.M. I found the thermometer still at 110°. I determined upon changing the eggs, thinking mischief had already been done, giving twelve of them to a broody hen, and leaving two in the incubator. The hen hatched eleven out of the twelve; the twelfth contained a dead matured chick. The incubator hatched one, the other being a clear egg. In other cases during my first trials I have frequently had the heat up to 110° in different stages of the hatching, and have found that if not continued too long it will not interfere with the actual hatching of the chicks. So great a heat ought, however, to be carefully avoided; one result that I have experienced from too high a temperature being that you will have a lot of chicks matured, and nearly so, dead in the shell; and another, that those which manage to escape from their shells, assisted or otherwise, will be extremely weak in their legs, growing worse as they become older, scuffling about more by the help of their wings than their legs, and most of them eventually dying.

I will conclude by naming what I am satisfied are essentially requisite in the artificial hatching of eggs—viz., damp atmosphere, otherwise numbers of chicks will die in the shell, and those hatched will be weakly; constant ventilation; temperature ranging from 100° to 106°, but as steady as possible at 103°—the heat to be slightly increased towards the end of the hatching; turning the eggs twice a-day; and darkness until the chicks are due, otherwise numbers will perforate the shell prematurely.

The incubator should also be placed in a room upon which the sun does not act, or it will be impossible to maintain a uniform temperature.—E. S.

THE EGYPTIAN BEE.—Part VII.

How I succeeded in transporting it to America.

Having, as related in page 306 of the last Volume of "our Journal," completely purged my apiary of an element which had turned out so entirely obnoxious, and having published without reservation the very discouraging results of my experience of the Egyptian bee, I had no idea that I should ever become possessed of the materials for another paper on the subject; such, however, turns out to be the case, and it came about in a rather unexpected manner.

During the latter half of September, I received a letter dated the 8th of the same month, from Mr. Jas. T. Langstroth, son of the distinguished American apiarian, and member of that eminent transatlantic firm, "L. L. Langstroth & Son, of Oxford, Butler County, Ohio, Importers and Breeders of Italian Queen Bees, and Agents for Langstroth's Patent Moveable Comb Hive." After very politely acknowledging and replying to a letter written by me last spring, and enclosing for my acceptance a *carte* of his distinguished parent, the reception of which, as will readily be believed, afforded me much pleasure, and which has formed a notable addition to my gallery of apiarian worthies, Mr. Langstroth, jun., went on to say—"We have been much interested in your articles in regard to the Egyptian bee, and, like true bee enthusiasts, are possessed with an insatiable longing for a queen of that variety. We would, therefore, ask you, as the highest favour you could bestow upon us, to forward us a pure queen of that variety, packed not like Herr Vogel's, but with sufficient honey for a twenty-five-days journey, and with rather *few* worker bees. For this queen we will remit you in draft on London any sum you see fit to name, on receipt of your letter advising us of her shipment. You will easily understand that we wish to have the credit of first introducing these bees to America, and to give you the credit of furnishing them for exportation to this country. We have only received the first four Numbers of The Journal of Horticulture, containing your description of these bees. If they do not mix with the natives or Italians as easily as the Italian race hybridise with the natives, and if they are less inclined to sting than the Ligurians, we shall hope that they may aid in the advancement of apiarian science in this country. If, however, *your* opinion (which we have not yet seen), is that they are 'a humbug' even, we still desire one queen for the purpose of experimenting. We, therefore, sincerely hope that you may be able to send us a queen, even if you have to replace her by the procurement of another from Herr Vogel, as we give you *carte blanche* in regard to price."

Reflecting on and admiring the facilities and wondrous speed of modern postal communication, by which the article announcing the successfulintroduction of the Egyptian bee into my apiary, and published in London so recently as the 21st of August, could reach one of the Western States of America so rapidly as to admit of its perusal, and a long letter being addressed to me in consequence within eighteen days, I debated how I could most speedily and completely fulfil the desires of my transatlantic friends. Evidently the first thing to be done was to "catch my queen," and as I had not one of the required species remaining in my apiary, I penned a few lines to Herr Vogel, on the 25th of September, asking him to send me another Egyptian queen as soon as possible, writing at the same time to Mr. Langstroth to report progress, and request farther instructions. Herr Vogel very politely acknowledged my note by return of post, informing me that he would dispatch a pure queen of this year on the 8th of October, and in due course I received from him the following, dated 9th of October—

"Dear Sir,—I have the pleasure of sending you a truly impregnated Egyptian queen, as advised in my last.

"The workers that accompany her are true Egyptian bees, and are bred by the queen you receive. She was reared about the end of July last, and all the queens reared from her brood turned out to be true Egyptians, the number being five.

"If there should be a few black bees among the workers that accompany her, they are not bred by the queen, but must have found their way into the Egyptian stock from a neighbouring hive.

"As the queen which you receive is unsurpassable in purity, I would suggest that in future you should rear your queens from her brood only, for then they will all be like the mother from whom they are descended."

This letter preceded by a day or two the arrival of the Egyptian queen, which came to hand on the 16th of October. She was packed this time in a small and light box, and reached me in much better condition than her predecessor, although both herself and her attendants were very torpid, and appeared benumbed with cold. I, therefore, lost no time in introducing her to a hybrid Italian stock from which I had previously removed the queen, and by which she was well received.

Prior to the arrival of the Egyptian queen, I had the following letter from the Rev. L. L. Langstroth, dated from New York, on the 28th of September, and in which he incidentally alludes to my controvery with Dr. Cumming:—

"Dear Sir,—I have been reading in the files of the London *Times*, to which I have just had access, your criticism of some of the statements of the Tunbridge Wells Bee-master. I had previously read his work called the '*Times* Bee-Master,' and the perusal of your communication, which under the circumstances must be considered as both courteous and forbearing, only deepens my conviction of his unfairness in controversy, as well as his ignorance on the subject he discusses. It would, however, be unreasonable to look for accuracy from a bee-keeper who not only describes an octagonal hive in use in his own apiary as a hexagonal hive, but who ascribes its great success to its hexagonal shape.

"Since writing to you from Washington, I have seen in Champollion's work on Egypt, figures of the queen, worker, and drone, of Apis fasciata. From my previous letters you will see how anxious I am to obtain this fall an Egyptian queen. As a matter of mere business, I can hardly expect to procure one of you this season, but venture to hope that you will 'strain a point' to put me in possession of so valued an acquisition. I have sent an order to Germany, but fear that it cannot be filled this fall. If you can send me a queen in whose purity you have confidence, I will defray any expense to you of procuring one next season, to replace her in your apiary. If under all the circumstances you can part with one, I would suggest sending her in one of your straw frame-hives, with plenty of provisions sealed over in old combs, and with a very moderate allowance of bees. The whole arranged for transportation *not à-la-mode* Herr Vogel. I have planned a simple and efficient contrivance for draining honeycombs on the centrifugal principle, as applied by Major Von Krashna. His happy idea will prove especially useful in some of our apiaries, where even under present arrangements a yield of from 100 lbs. to 200 lbs. of honey is often obtained from a single colony.—Yours very truly,

"L. L. Langstroth."

In compliance with these instructions, I packed the Egyptian queen and her alien subjects with the utmost care, in a straw frame-hive, and despatched them from my apiary to Liverpool on the 21st of October, thence to be sent on their long voyage across the vast Atlantic by the "Inman," line of steamships, one of which left England the next day.

The result was communicated to me by the Rev. L. L. Langstroth, in a letter dated from Philadelphia on the 15th of November, in which he says:—

"Thanks for your great kindness in the matter of the Egyptian queen. Thanks to your admirable packing, the colony arrived in perfect condition, and although not delivered to me until eight days after the steamer arrived, I found only a few dead bees—not many more, probably, than would have died had they remained on their stand in your apiary. A bee-expert at the Custom House pronounced the package to be the best conceived and executed of any he had ever seen. I should like much to pay you a deserved tribute in the columns of our bee-journals, but fear it would bring upon you an avalanche of inquiries from our excitable bee-keepers.

"I am not surprised that you found the Egyptians very cross in your cool and damp climate, for I find such weather as is the common rule with you makes the Italians quite irritable. Our dry and hot summers will, no doubt, seem natural to these daughters of the Nile."

I need hardly express my gratification at the complete success which has crowned my endeavours to transmit the Egyptian bee to the New World; and although I have myself very little hope or expectation that the extreme irascibility of this beautiful little Apis will become ameliorated by change of climate, it will, nevertheless, afford me much pleasure to learn that the favourable anticipations of my distinguished contemporary have proved more correct than the sombre vaticinations of—A Devonshire Bee-keeper.

P.S.—I may add that I presented my transatlantic friends with the bees which accompanied the queen, asking merely for repayment of my expenses out of pocket; a request which was most promptly complied with.

FOUL BROOD.

I now give my promised experience with foul brood. The stocks which I experimented with were eight in number: three which had had a part of their combs excised, and five

which had combs from diseased stocks. Two of those with excised combs and one of the others did not survive the winter, whilst another did well and swarmed twice. At this time I examined it, and found foul brood in the bottom box, while the two top boxes, which had old combs, were quite free, the disease having broken out in the new-made combs; but when the young queen commenced breeding it spread throughout the whole hive. In another I ventilated, and retarded breeding as much as possible, and it was only when the weather became warm that this one fell a prey to the disease. The other three stocks are quite free, and at this time the best I have in my apiary. I am inclined to think that the disease which causes foul brood exists in hives even when no breeding is going on, and that transferring diseased combs to other hives will infect them. Infected combs may be known by their clammy and adhesive character, and are of a brownish colour, appearing also thicker than usual, as if some fungus existed. I believe it is impossible to get rid of the disease so long as any of these combs remain; but I imagine that the side combs may be used with impunity if they have a fresh and dry appearance, as they were side combs only that were in the hives which escaped the malady, notwithstanding that the combs were taken from diseased stocks. My experience with foul brood leads me to believe, that instead of cold having anything to do with it, it is quite the reverse, and that it is warm weather which propagates it. This has certainly been the case in my apiary during the last two seasons.—A Lanarkshire Bee-keeper.

WOODBURY HIVES.

I will describe an improvement in the Woodbury bar-and-frame hive, especially where the compound bars and frames are used. I have tried it, and it quite answered my expectations. It is intended to facilitate the moving and removal of the frames, by doing away altogether with the notches in which the frames rest. In the front upper and inner edge of the hive you have, first the usual three-eighth rabbet; below this, instead of notches, is another rabbet one-eighth of an inch wide, by three-eighths deep, and the positions of the bars and frames are marked by incisions or lines, which are inked to make them more conspicuous. The back upper and inner edge of the hive has the rabbet made three-quarters of an inch deep; on this rabbet rests a loose piece of wood one-quarter of an inch thick, and three-quarters of an inch deep, by 14½ inches long. This piece is also marked with lines in the same way as the front of the hive, to show where the frames are to be. Through the back of the hive are five set screws which are made to bear on the loose piece of wood, so that when the bars and frames are in their places, by turning the screws the wood is pressed forward and holds them all tightly, so tightly, indeed, that the hive may be turned upside down, and drummed, without their getting out of their places. A bit of brass or iron is let into the moveable piece of wood where the screws bear upon it, to prevent its being galled.

I was led to this contrivance by the difficulty I have experienced in moving the frames when well cemented by the bees. The advantage of this plan is, that by loosening the back screws the frames are all set at liberty at once. The loose piece of wood can be easily pressed back, no matter how well cemented, and the frames can be gently pushed one towards another without lifting up, as you must do when they are in notches. Another advantage is, that old hives can be easily altered to this plan. It is also inexpensive, and the notched piece of wood at the bottom is never required to keep the frames in their places.

My experiments as yet have all been with the black bee, but I hope to have the opportunity of multiplying a stock of Ligurians next spring, and should like to ask Mr. Woodbury the way in which he would advise a bee-keeper to proceed with one Ligurian stock.

Can you tell me where the queen-cages (pipe-covers) described in Neighbour's book are to be obtained, and what is the price of them?—C. F. George.

[Wire pipe-covers are sold by many tobacconists at a very moderate cost, and form excellent queen-cages. Mr. Woodbury promises an article on the propagation of Ligurians at no very distant date.]

OUR LETTER BOX.

Address (*Rev. H. H.*).—If you enclose a stamped envelop your full direction we will send the address you ask for.

Rouen Ducks (*H. B.*).—If you read the report of the Birmingham Show you will see you were beaten in weight. Your birds of 1866, weighing 14 lbs. the pair, are, nevertheless, good birds, and would have won years ago. It is a good plan to confine them for a fortnight or three weeks before exhibition at a large show. Your feeding is good, and an increase in the amount of flesh will add weight. The great point in rearing birds that are intended to compete against all England is to feed them from the first with a view to success. By this we mean, never to allow them to become thin or out of condition. No amount of feeding will make winners of birds that have ever gone back. Indian corn is not good food for young growing poultry; it makes only fat.

Brahma Pootras (*Novice in Brahmas*).—There are certain points that are in dispute. Both sexes should have pea combs; yellow, feathered legs. The cock should have a black or spotted breast, we prefer the latter; and he should have a light hackle and saddle, black tail, and black-and-white-marked wing. The hen should be pencilled all over. For perfect specimens neither should have any buff feathers or shade. The hen should as much as possible be pencilled on the breast. Vulture hocks are objected to by many. Large size.

Crève Cœur's Head and Eyes Affected (*Crève Cœur*).—These birds are subject to such attacks as you mention when they change about from one place to another. We do not consider it infectious, and the convalescence is not long. While they are suffering they should have very little water. It is enough if they are allowed to drink three times per day. They should have no water within reach. Barley and oatmeal are the best food, with some whole Indian corn once in the course of the day. Buckwheat meal is good food for them, and that on which they are principally fed in France. Potatoes and pollard are not good. They must have green food; and if they have no grass run they should have good large sods of growing grass cut with plenty of earth—they will eat it all. It is not well to give them many peas. In such attacks you will find some stale bread soaked in strong ale very good food and beneficial.

Apportioning the Sexes in a Yard (*Lex*).—It depends on the time of year. At this season four or five hens are enough to run with one cock; but it is not necessary to carry this rule out strictly, as few hens are laying. As the weather becomes warmer the number may be increased to fourteen or fifteen. When you turn down another cock it is more than probable—almost certain—there will be fighting; but after it is decided which is the master they will take separate walks and hens. You can insure similarity of breed on one side by having all the cocks alike. We cannot tell you what the breed will be unless we knew the hens you keep. As a rule chickens take more after the hen than the cock.

Wart Under Hen's Eye (*J. H.*).—If it is productive of no inconvenience we should take no notice of it. If otherwise, it might be burnt with caustic; or if small at the roots it might be cut off.

Sprinkling Water on Incubating Eggs (*Harriet*).—The eggs require to be sprinkled with water once in the day (the morning is the best time), for ten days before hatching. If the weather is very frosty it should be done immediately before the hen goes on them after feeding. Half the failures in hatching are to be attributed to the neglect of this precaution. They do not want artificial heat, but at this season of the year they require to be in an outhouse sheltered from draughts, and the flooring of which is of earth and dust. They require high feeding, and it is well to give them a meal by candlelight at eight or nine o'clock, as the nights are so long. The chickens soon begin to look for it, and come out at the first glimmer of light. They should have beer to drink.

Comb of Cochin-China Cock (*W. H. G.*).—There is no fixed size for the comb of a Cochin-China cock. The essential points are that it shall be perfectly upright and correct in shape. We never saw a Dorking comb on a Cochin cock; their shapes are essentially different, and the Brahmas have pea combs, which are never seen on Cochins. Wherever the combs are overgrown they show signs of turning over behind, and such are disqualified. Most of the prizetakers at Birmingham have been successful exhibitors for years, and are themselves too good judges to send faulty birds.

Ladies' Pets (*A Lover of the Country*).—I see no reason why you should not indulge your desire for some Pigeons; and if you procure some of the tamer varieties, as Fantails, Trumpeters, Jacobins, Nuns, &c., they will not be likely to leave your place, especially if you have more than one pair. Of course, as pets you will provide them with comfortable board and lodging, and there is no reason to consider they would in any way prove a nuisance. A Jay may be kept tame in a cage and taught to talk, but Jays are very apt to be mischievous if allowed their liberty. Collared Turtle Doves would roost in your trees, and if tamed before they were let out would make very interesting pets. Bantams are very pretty, and would do well in your ornamental grounds; but if you fear them you might have Plovers if your grounds are enclosed.—B. P. Brent.

Goldfinch Mule with Indurated Skin (*H. Bedwell*).—I have examined the bird sent. I think rape seed injurious to cage birds from its pungency; but whether it would affect a bird in the manner yours is I cannot say. Round one eye, down the back of the neck, and along the shoulder of one wing, the skin is denuded of feathers, white, hard, dry, and granulated; at the back of the neck was a tumour of a white cheesy-looking substance as large as a pea. When living at Bessel's Green my fowls were mostly attacked in a similar manner, and Ducks would not live long with me. I attributed it to some mineral in the water, it having a greenish tinge, and the soil being what geologists call the green sand formation.—B. P. Brent.

POULTRY MARKET.—January 7.

We have had an anomalous week. There is always a temporary dearth after Christmas; but this year we have had snow enough to impede communications, and this has diminished our small supply. It has caused a rise that will not be maintained.

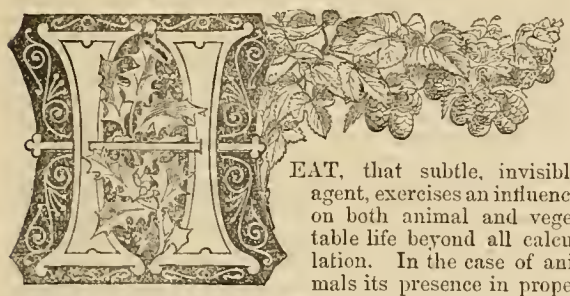
	s. d.	s. d.		s. d.	s. d.
Large Fowls	3 6	to 4 0	Pheasants	3 0	to 3 6
Smaller do.	3 0	3 6	Partridges	2 0	2 6
Chickens	2 6	3 0	Grouse	0 0	0 0
Geese	6 0	7 0	Hares	3 0	3 6
Ducks	0 0	0 0	Rabbits	1 4	1 5
Pigeons	0 10	1 0	Wild do.	0 8	0 10

WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 15—21, 1867.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
15	Tu	Passiflora cærulea.	41.6	28.9	34.7	12	2 af 8	17 af 4	after.	6 af 2	9	9 38	15
16	W	Sparaxis tricolor.	41.7	30.6	36.1	19	1 8	19 4	9 af 1	19 3	10	9 59	16
17	Th	Trichonema bulbocodium.	42.5	30.8	36.6	13	0 8	20 4	58 1	31 4	11	10 19	17
18	F	Neapolitan Violets.	42.7	31.3	37.0	16	0 7	22 4	56 2	38 5	12	10 38	18
19	S	Russian Violets.	43.0	30.5	36.7	18	58 7	24 4	4 4	36 6	13	10 57	19
20	Sun	2 Sunday after Epiphany.	42.5	31.0	36.7	15	57 7	25 4	16 5	26 7	○	11 15	20
21	M	Sun's declination 19° 15′ s.	42.2	32.9	42.6	18	56 7	27 4	31 6	7 8	15	11 32	21

From observations taken near London during the last forty years, the average day temperature of the week is 42.3°; and its night temperature 30.9°. The greatest heat was 69°, on the 19th, 1828; and the lowest cold 4½° below zero, on the 19th, 1838. The greatest fall of rain was 0.88 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

MODES OF HEATING.



HEAT, that subtle, invisible agent, exercises an influence on both animal and vegetable life beyond all calculation. In the case of animals its presence in proper amount sustains life, and its absence causes death; while in the vegetable world it is scarcely of less importance, as growth is most rapid where it abounds, and the plants there attain grander dimensions than in colder climates. My remarks must, however, be restricted to the artificial means for the attainment of desired temperatures, the object being the supplying heat to a given space, whilst wasting as little as possible of the materials employed to impart that heat. Combustion of coal or other fuel is the source of such heat, although fermenting materials also supply it, and recourse to the latter mode of heating is not likely to be ever abandoned. I will, however, first advert to the mode of supplying heat by the combustion of fuel.

Let us now see how fire heat can be applied in the most economical manner. Assuming a given quantity of fuel to afford a certain amount of heat, in which way can that heat be used for the purpose required with the least possible waste? for, that a considerable amount of heat is wasted, even in the best constructed apparatus, cannot be denied. I have on former occasions argued that one of the best examples of fire being applied to an object from which it is again abstracted with the least loss, is afforded by an ordinary brick oven, where the combustion takes place inside, and the heated sides, bottom, and roof are all required for the purpose of baking bread; externally, I believe, but little heat escapes, and the amount of that which goes up the chimney is less than in many heated structures. This economy, however, is attained by the fire acting directly in accomplishing the object in view, and not by its heat being communicated through another medium, as in the case of plant-houses; for in the latter it is the atmosphere that requires warming, and it is difficult to apply fire heat by any very direct means without at the same time imparting to the air some properties injurious to vegetation. Heat, however, has sometimes been applied in a manner more direct than is often thought practicable, but the results have not generally been satisfactory. A mode of doing so, however, which came to my knowledge many years ago is worth repeating, as it was one of the most remarkable cases of fire directly supplying bottom heat that I am acquainted with. It was as follows:—

In the coal districts of the north, before the demand was so great for small coals for steam-engines and other purposes, large quantities were thrown away as waste at the mouth of the pit, and being ignited, and augmented daily by several tons of additional fuel, an immense fiery heap was always burning at the mouth of the pit. I believe some of the heaps covered an acre of ground, and a red and lurid flame might be seen miles off on dark evenings. Some of the heaps were 20 or 30 feet deep, the outer edge sloping off to meet the natural ground, and it was on the outer edge of one of these fiery heaps that some one attempted the out-door forcing of vegetables. As the fire had in a certain measure left the corner he intended to operate upon, although the ashes were still hot below, the operator determined to cover a portion of the heap with earth, and plant Potatoes, which he watered and attended to in the proper manner; and as at a local horticultural show prizes were offered for the best dish of Potatoes grown in the open air, his crop was deemed eligible, and he easily carried off the first prize. Here, then, was a case of the direct action of fire underneath the object forwarded. Although it is not an example which it would be prudent to imitate, some modification of it might be attempted; and the mode adopted at Leeds Castle by C. W. Martin, Esq., M.P., as detailed in the last Volume, is one of the methods in which heat from beneath may be applied. This plan, as will be remembered, was by having an underground chamber, at one corner or side of which a fire was kept, which, playing all over the chamber, was not allowed to ascend the chimney until all the heat had been expended, and the little smoke unconsumed rendered comparatively cool. This Mr. Martin calls the hypocaust mode of heating, and its merits are its simplicity and the ease with which the heat acts on the part where it is most needed, which is, of course, the roof.

In this immediate district, where large quantities of Hops are grown, the drying them by fire heat has called forth many modes of applying it, from some of which hints may, perhaps, be gleaned. Hops are more frequently gathered wet than dry, and even if they were always dry they would have to undergo a process of fire-drying in order that they might be kept without moulding, for the moisture in the stalks and bases of the scales has to be driven out by heat, and this is an operation involving a large expenditure of fuel. Such, too, in the general construction of Hop-kilns is of a rather expensive kind, ordinary wood and coal fires being seldom used, although in one of the cases where this is done the plan so closely resembles what is called the Polmaise system that it is worth describing here. I may in the first place remark that Hops are generally dried on a floor up-stairs; the floor, instead of being of the ordinary description, is composed of a hair-cloth spread over a latticework of timber not likely to ignite with the heat, Poplar wood being esteemed the best. Very often the kiln is circular, and from 12 to 18 feet in diameter; the chamber, where the fire is burning, is seldom less than 12 feet, and more frequently 15 or 18 feet, high to the drying floor, and the roof tapers up in a conical manner from a little way above this floor to the apex, where an opening, 3 feet in diameter, is left for the steam to escape. This opening is protected from rain by a cowl moving with the wind, and every care is taken to insure the steam passing off quickly. The interior is plastered

smooth, and the latticework is close enough to allow of a person walking over it in safety, the woodwork occupying about one-half of the area. On this floor, to which access is gained by a door, green or wet Hops are often laid quite a foot thick, and the moisture they contain is driven off in about ten or twelve hours, seldom more than the latter, as such kilns are kept going night and day, and two loadings in the twenty-four hours are expected. Allowing a little for loss of time in putting on and taking off the Hops, ten hours may be said to be required in drying a mass quite a foot deep by means of the fire kept on below, the heat passing up through the coarse hair-cloth and through the mass of Hops lying upon it.

One of the modes of applying fire heat to dry the Hops is by means of what is called the cockle system, being simply a cast-iron box of about a cubic yard in capacity, which is turned bottom upwards inside the heating chamber, and has the fire underneath it. There is in one side of the box a very small hole for the escape of the smoke, which afterwards traverses a flue passing round the chamber, and finally enters a chimney. There are dampers at proper places to check the fire burning too briskly. The heated metal, the fire being inside, or rather underneath the box, gives off the heat that dries the Hops, and cold air is admitted from the outside, and passes over the top of the cockle. This mode, as will be seen, resembles in a great measure the Polmaise system, and I need hardly remark that any kind of fuel is available for such a heating contrivance; it has, however, all but gone out of use for Hop-drying, few kilns being now erected on this principle, and in most of the older ones open fires have been introduced. In their case the fireplace is raised a little in the middle of the heating chamber, and merely consists of bars a foot or so from the ground with a little brickwork surrounding them, and for about a foot higher. Directly over the fire, and about halfway between it and the drying floor, an iron plate, about 4 feet square, is hung by a chain to the kiln floor; this, receiving the upward current of heat, spreads it all around, and at the same time prevents any danger of the centre of the floor taking fire. Coke, charcoal, and Welsh coals are burnt—not common coal or wood, as the smoke from either would be objectionable.

The heated air from the fireplace in passing through the mass of wet Hops dries them by degrees from the bottom to the top; and to encourage a stronger upward current of hot air various means have been adopted. With this view openings in the outer wall at the bottom are general, sliding shutters being provided to close them when required. A few years ago a patent was taken out for a plan in which a number of cast-iron pipes were carried in a slanting direction from the bottom of the outer wall to the top of the fire. The pipes lying in this position, and their ends being open, it was considered that the heat acting on the upper ends of the pipes would cause the air which these contained to ascend, and that its place would be taken by air from the outside, entering by the lower end. This plan had many advocates for a time, and the principle was highly spoken of as affording a certainty of a greater volume of heated air being driven upwards than by the means previously in use; but these advantages seem to have been more imaginary than real, for during the last year or two the plan has in many cases been abandoned, and the simple method of allowing an open fire to collect its own air to heat and send forth in the best manner it can has been again resorted to as the most simple and effective means of drying Hops. Colling's patent, as the invention alluded to is called, has, therefore, fallen to a considerable extent into disuse.—J. Ronson.

(To be continued.)

ADMITTING AIR TO VINES.

In a recent communication I made a few remarks, founded on experience, on the formation of Vine borders. I will now advert to a subject which is of as much importance in connection with Vine-growing, and that is ventilation. It has been ably discussed in The Journal of Horticulture already, but the more it is brought into prominence the more will its importance be appreciated, by young gardeners especially.

As soon as Vines commence growing in the spring they make rapid progress, and require unwearied attention until the Grapes are perfectly ripened and perfect in flavour. If the latter are not both there must be something wrong, and no cultivator ought to be satisfied until he arrive at some definite conclusion as to the reason of it. If the evil is in the borders no amount of attention to ventilation can remedy that; but if the borders are not in fault, perhaps the ventilation may have something to do with it. To be successful in anything requires a great amount of patience and careful attention to the most minute particulars; but more especially is this the case in gardening. A quarter of an hour's inattention in the early months of the year will do more mischief than can be remedied in the course of the season. It is in the early months of the year that the gardener must be watchful, and especially so in regard to Vines. Judicious ventilation is of the utmost importance to them.

When vineries are of the lean-to description it is seldom that there is any means of ventilation provided in the back wall of the house. Now I think this is a mistake. In wet weather the lights cannot be drawn down, and the front sashes must be opened instead; but if means of ventilation had been provided in the back wall it would have been better to have afforded a little air there. I have gone into a vinery in a dull drizzly day, and it was easy to perceive by the closeness of the atmosphere that none of the ventilators were open. The lights had been drawn up on account of the rain, and the person in charge did not think it of consequence to open the front sashes. Now, if ventilation had been provided in the back wall, and the ventilators had been opened a little in dull weather, it would have kept the atmosphere pure without materially lowering the temperature. In a house 30 feet long, four spaces 18 inches long and 6 inches wide would be sufficient, with a board in each to hang on centres, and all to open at once with a rod and lever. If a fine wire netting be fixed over the outside it will prevent the ingress of all insects, check the force of cold currents of air, and still admit enough in dull weather.

I have often experienced the benefit of opening the ventilators a little very early in the morning. I like to take advantage of that period of the day to thin the Grapes before the sun rises high and becomes troublesome. I put on a little air before commencing operations, at the highest point of the house generally, by drawing down every alternate light about 2 or 3 inches, and by this means the atmosphere is insensibly changed, and no oppressiveness is felt, which certainly is the case when no air is admitted. As the sun rises the thermometer will also rise rapidly, and more air must be admitted; but a watch must be kept for the cold cutting winds which are so prevalent in the spring months, for the berries are sometimes injured by cold draughts, especially in their young state, while the foliage is apparently unaffected.

There is also much to be gained by judiciously husbanding the sun heat, especially by shutting up early in the afternoon. I think it well, also, to have the hot-water pipes or flue at nearly a uniform heat, excepting, indeed, in very severe weather, when the temperature of the house must not be too low. I would rather see in a cold frosty night the temperature 5° lower than usual, than the pipes overheated to raise it to the required point. In many cases enough pipes are not put in at first; and for the sake of an extra first expense an ultimate loss is incurred, more fuel is wanted, and the plants are liable to be injured by the fumes from overheated pipes. In a house 16 feet wide there ought to be six rows of four-inch pipes—that is, if the Vines are to be forced early, as half of that heating surface would keep the frost out if the Vines are only intended to start naturally, without the aid of heat artificially supplied.

I may also allude to a circumstance connected with some young Vines planted here in the spring of 1864. It happened that with some of the sorts to be planted I was unacquainted, and if on bearing they were found to be unsuitable they were to be removed. Some of the others were not intended to be permanent; so that by planting a permanent Vine between those which were not to remain I could in the second season train a young rod up from each side of the permanent Vines, to be ready to take their places in the autumn of 1865, when the first crop was cut. I found that where two rods were trained up in that way the main or central rod was stronger than in the case of the Vines which had only one rod, and I believe it had as many roots as any two of them. If I had the opportunity I would like to plant a vinery, say with room for nine Vines 3 feet apart, in this way—

. . . . . .
2 1 2 2 1 2 2 1 2

I representing the permanent Vines not to be cropped the first season; 2, those to be cropped heavily in the second season and then to be destroyed, while two young shoots must be trained up from each of the permanent Vines to supply their places. Thus there would be six Vines to bear a crop the second season after planting, each of which would carry from

9 to 12 bunches. In the third season after planting the permanent Vines would be able to carry a crop of twelve bunches each. They would, I have no doubt, support double that number; but it is better to crop lightly at first, as the young rods will have to make wood that season.—J. Douglas.

NOTES ON SOME VARIETIES OF THE POTATO.

As planting time is approaching, in fact come, to those who have warm nooks and corners, allow me to state my experience of some of the leading kinds. Being located in one of the best Potato-producing districts, with a soil that can hardly be surpassed for producing them to perfection, I have thus had an opportunity of growing, seeing, and proving many kinds under favourable auspices; and I have paid attention to the subject for nearly half a century, collecting materials, very heterogeneous I must say, on the management, cause of disease, and preventives, enough to supply an editor with clippings and anecdotes for several years; but as the cattle and Potato plagues have alike set all our knowledge and writing at defiance, and proved one nostrum after another useless, I shall not vex you with extracts from my Potato *bibliothèque*, but give a list of sorts and their qualities as proved here (Somersetshire), on a fine, deep, sandy loam—a soil never too wet nor too dry.

1. *White Clumper* first, as being our great staple production here, and a sort that resists the disease better than any other kind that I have tried. The crops of it have been extra fine this season; and I have heard the growers say, that although they lost one-third by the disease, yet they had a good average crop left. This kind also keeps well until late in spring, or, in fact, till the early kinds come in. It is a good-flavoured sort, and boils dry, but having a yellowish tinge when cooked it does not look so well at table.

2. *Grammar.*—A red Potato, very like a Fortyfold, a great cropper, and was cultivated largely at one time in this neighbourhood, but having proved watery in the heart when cooked, it has been abandoned. I think this is the sort called Grampart about London.

3. *Fortyfold Early.*—Our best early and best second early sort; white, mealy, and nicely flavoured. It requires a rich soil to grow it to perfection. It is, *par excellence*, my favourite Potato. When the size of a marble you can cook it, and it will prove dry from beginning to end. It is rather subject to disease.

4. *Fortyfold Late.*—Exactly like the Early in colour, quality, and flavour, but is the best late-keeping sort I know. It is very subject to disease, on account of growing so late in the season. Perhaps the same as Covent Garden Blue.

5. *York Regent* is unsurpassed for dryness and other qualities. It comes in early, keeps late, and is fine all the year round. The Dalmahoy planted alongside of it proved to be the same. The seed was procured from Messrs. Lawson and Son, who sent it out under the new name. The seed had been evidently grown in that fine Potato district that lies between Musselburgh and Dunbar, on the Firth of Forth. They looked a fine improvement on the Regent, but cultivated together I could see no difference.

6. *Patterson's Victoria.*—This has proved here to be one of our best kinds, and apparently an improved Regent of a flatter form, more like a Lapstone. It is mealy and excellent, finely flavoured, and a great cropper. It grows late, and is therefore subject to the disease; one-third of mine perished. This is just the sort for "Solanum," it grins through its leathery jacket in fine style.

7. *Fluke.*—Now so well known that description is useless. Its thready appearance when dressed is its only fault.

8. *Mona's Pride* is an early sort any one might be proud of having raised. Early, prolific, dry, and of fine flavour, I think it the best of the Ashleaf family.

9 and 10. *Salmon Kidney* and *Red Ashleaf* have been here famous croppers, but only second-rate in quality.

11 and 12. *Royal Ashleaf* and *Imperial Ashleaf* are two wortbless sorts when compared with others; the names are the only thing either Royal or Imperial about them.

13 and 14. *Telegraph* and *President* are very good pig Potatoes, and, like 11 and 12, the names are their best recommendation.

15. *Myatt's Prolific.*—A first-rate second early, mealy, and finely flavoured. Produces good crops.

16. *Napoleon.*—A fine mealy Potato, fit for a Prince's table.

17 and 18. *Dean's Early Ashleaf* and *Dean's Royal Prolific* seem very good, but I have not seen enough of them yet.

19 and 20. *Patterson's Blue Round* and *Seedling Rock* are both so like others—viz., Jersey Blue and White Rock, that I cannot see any difference. The last is, however, a fine Potato, and does remarkably well in this locality.

21. *Handsworth Prolific.*—The most dwarf Potato I know, and the earliest. If its other qualities were equal to those, it would be first-rate as an early sort. It might be improved with Early Fortyfold.

22. *Oxford Early.*—This is designated by one of your advertising friends as "the best Potato out," and I endorse the opinion so far as to say that it is one of the earliest, one of the dwarfest, and one of the handsomest of its race; it is also mealy, but yellow-fleshed—a great drawback with many people who prefer showy, laughing, mealy kinds, as "Solanum" says, tempting you to eat them.

I have stated my experience with a few kinds that I have tried here from time to time, and described the kind of soil they were tried upon. "D.," of Deal, would have added increased value to his article, page 462-3, Vol. XI., had he told us the sort of soil his is, which I suppose is a good one, being near the sea.—J. Scott.

P.S.—On the morning of the 3rd, thermometer at 17°; 4th, thermometer at 12°; 5th, thermometer at 10°. Snow 6 inches. One o'clock, thaw going on fast.

GARDENERS' EXAMINATION FOR HONOURS.

We are now enabled to give the list of the successful candidates at the recent examinations of the Royal Horticultural Society, and it is very encouraging to see so many of the young men who presented themselves come off so well as they have done. Although this is the first examination of the kind the Society has held, it shows how large a per-centage of the young gardeners of the present day really devote their time to the acquirement of a thorough knowledge of their profession; and it is also evidence against an opinion, which was becoming somewhat general, that the young gardeners of the rising generation had no aspirations, and that the race of the Paxtons, Spencers, and Thomsons was rapidly becoming extinct. We are informed, judging from the papers sent in, all of which were more or less highly creditable, that if these examinations become permanent, we may look forward in future years to having a much larger number of educated and high-class gardeners in the country than we have ever had, and we shall know also where these are to be found. We hear, also, that even those who failed on this occasion gave such evidence of better things as to leave no doubt of their success on a future occasion.

The Council of the Royal Horticultural Society, on the report of the Examiners, elected, on the 8th inst., Mr. R. C. Kingston, Royal Gardens, Kew, and Mr. George Stanton, Berry Hill Gardens, Taplow, Maidenhead, to be Associate Members of the Society. A medal has also been awarded to Mr. G. Stanton for the highest number of marks in practical gardening.

The following certificates have also been granted—viz.:

		Floriculture.	Fruit and Vegetable Culture.
Geo. M. Woodrow, Royal Gardens, Kew		1st-class certificate	
Alex. Robinson	Chiswick Students.	2nd-class certificate	2nd-class certificate
William Spinks	Chiswick Students.	1st-class certificate	1st-class certificate
Brian Wynne	Chiswick Students.	2nd-class certificate	
Thomas Wright	Chiswick Students.	1st-class certificate	2nd-class certificate
Henry Hannan	Chiswick Students.	1st-class certificate	2nd-class certificate
John M. Henry, Royal Gardens, Kew		2nd-class certificate	2nd-class certificate
Fredk. Thompson, Royal Gardens, Kew		1st-class certificate	2nd-class certificate
A Jamieson, Royal Gardens, Kew		1st-class certificate	
John Stapley, Hovenden, Biddenden, Staplehurst.		1st-class certificate	2nd-class certificate
Thomas Waddington, Millfield House Gardens, Cobham		1st-class certificate	2nd-class certificate

Gardeners' Improvement Societies.—Any of the Gardeners' Mutual Improvement Societies who have joined the Royal Horticultural Society, will oblige by sending to The Journal of Horticulture copies of their rules and by-laws for the guidance of young societies.—Taplow.

VINES AND VINE BORDERS.

I THINK Mr. Wills has entirely misunderstood my motive in asking for further details respecting the Vine borders at Huntroyde. It is not often that any gardener has the opportunity of doing what Mr. Wills proposes to do, and having begun the culture of the Vine on a large scale without any practical knowledge of the subject, I thought Mr. Wills would be able to say whether I ought to be satisfied with the growths my Vines have made, or whether I could have doubled their growth if I had gone to greater expense in forming my borders.

In the account I gave of my Vines (page 421), I omitted to say that I allowed many of them to bear from one to three bunches each. Where three were left two were on side shoots, and the other on the main shoot. These bunches were well coloured and ripe in the early part of September, four months from the date of planting.

If Mr. Wills had followed my example, and given a fair statement of the cost of the proposed Vine borders, including brickwork, flags, hot water, air-shafts, &c., I should have been much obliged to him; and I can see no reason why my desire to know more about these Huntroyde Vine borders, which, when completed, will contain nearly 3000 cubic yards of compost, should induce him to regard me as a foe or a grumbler.

That the compost described by Mr. Wills will grow very good Grapes I have no doubt, from the fact that the Vine grows vigorously in all soils and in all countries, from the shores of the Baltic to the Peak of Teneriffe; in the strongest clay, as well as the poorest of sandy and gravelly soils. The finest young Vines I ever saw were growing in ordinary garden soil a few miles from Tirlemont in Belgium. The valley of the Garonne has no advantage in soil over the valley of the Medway. Will Mr. Wills say why Maidstone has not its vineyards as well as Bordeaux? If luxuriance of vegetation depends more on soil than climate, why should not the Castor-oil Plant be grown in England as well as in Italy, or the Sweet Chestnut ripen its fruit in our woods as well as it does in the south of France.

I assure Mr. Wills that having made a section of his borders in accordance with the description given in his article of the 16th of October, I am not likely to forget anything about them, and I am only waiting for the particulars as to cost which I have asked for to complete my notes for future reference.

Notwithstanding Mr. Wills's explanation about the nine-inch layers of his border, I am still unable to see what benefit 336 pecks of soil will derive from 1 peck of bones. "The expense is not so great to gentlemen." I am surprised that a writer of the Journal should forget that many hundreds of its readers are gentlemen without "a piece of land from which the sods can be cut," and whose purses are unequal to the demand of "ten guineas a-ton" for bones. I shall always be ready to exchange information with Mr. Wills, either about Vines or the soil and climate proper to grow them in, but only so long as he is disposed to discuss the matter in friendliness and candour.

Would Mr. Wills really be so very much astonished to see an "article by Mr. Thomson, or any other gardener endowed with a moderate share of common sense, advocating such a barbarous system of Vine culture" as that mentioned by your correspondent "VITIS?" If so, why has he not already given utterance to his indignation at the barbarity of shutting up a Vine in the mid-season of its growth in a mean temperature of 81° for Hamburghs, and 85° for Muscats? Mr. Wills must surely know that this temperature, in which the "proprietors of villa residences who are not supposed to employ scientific gardeners" are recommended to grow them, is wholly unnecessary. Is Mr. Wills's silence to be attributed to the benefit he has received from the application of the author's styptic to the bottoms of his Pelargonium cuttings?

If we were to follow the 45th degree of south latitude from the coast of the Bay of Biscay, making little excursions for a few degrees north and south of that line till we come to Astrachan or the Caspian Sea, we should pass through countries possessing great diversity of soil, but almost equal summer temperatures, and nearly the same annual rainfall. In these countries, with 23 to 27 inches of rain annually, and a mean summer temperature of 70° to 73° Fahrenheit, the Vine grows and fruits well even without cultivation. In Mr. Thomson's treatise it is recommended, "By the time the bunches are in bloom" to "let the night heat be 70°," to allow a rise by sun heat to 80°, and to shut the lights early enough to raise the thermometer to 90°. In growing Muscats it will be right to increase these temperatures 5°. Does Mr. Wills know of any country where Vines have to endure a like heat at the period of their bloom? Is he aware of the rainfall necessary to countries having so high a temperature? The lower valley of the Niger has a temperature in the beginning of the rainy season of 74° to 80°, rising in the month of September, as the rains decrease, to from 76° to 84°. The annual rainfall is from 6 to 7 feet, and this is more than doubled by the river, which in its rise of 28 feet in perpendicular height brings down an immense volume of water at a temperature of 80°, producing a luxuriance of vegetation never seen in the home of the Vine, but which delighted the sight of your correspondent "A SURGEON" in his visit to the home of the Oil Palm. The Vine seems to be very much at home in the lower valley of the Volga. The rainfall and the temperature during the summer months are about the same as in the south of France, the heat perhaps a little higher, and the Grapes as fine as any in the world. The mean summer temperature is 72°.

I do not say that Mr. Wills will not do very well with his borders. I believe Mr. Thomsen has grown good Grapes in the heat he recommends; but I do say the heat of the one and the soil or compost of the other are wholly unnecessary for the growth of Vines. I hope in time to be able to prove they are equally unnecessary for the growth of Grapes.—H. S.

PSIDIUMS.

IN answer to your correspondent "G. S.," Psidium Raddii requires a stove to bring it to perfection, it is then superior to P. Cattleyanum. I am under an impression that "G. S." has not P. Raddii, as I am not aware any nurseryman has it true in this country. "G. S." states, "There are two varieties of P. Cattleyanum, the fruit of one being spherical, and the other somewhat Pear-shaped." This assertion shows how careful people should be before they make a positive statement; for the one is P. Cattleyanum, which attains a height of from 15 to 20 feet; the other, P. chinense, which averages from 6 to 8 feet. They are equally hardy, and great bearers.

Psidiums as yet have not had that attention paid them they deserve, as they are equally useful at the dessert and for jelly; and it must be borne in mind that those which appear least grateful to the palate make the best jelly.

The Psidiums which I cultivate are—1, P. chinense; 2, P. dichotoma; 3, P. aromaticum; 4, P. acre; 5, P. pomiferum; 6, P. Raddii; 7, P. pyriferum; 8, P. Cattleyanum; 9. P. montanum; 10, P. cuneatum; 11, P. araça; 12, P. araçaçaçean; 13, P. sp., a large purple kind. Nos. 11 and 12 are Portuguese names, and very distinct. I consider the best four of the above to be—1st, P. araçaçaçean; 2nd, P. Raddii; 3rd, P. pyriferum; 4th, P. aromaticum; but all are useful, as they come in at various times.

I imported the above, as no dependance is to be placed on purchasing them true, even if they can be obtained at all.

CASIMIROA EDULIS.—I see the above-named plant advertised by a London nurseryman, giving a flaming account of its capabilities of adapting itself to various situations. It may exist in the west of England in a sheltered situation, but it requires a stove to grow it in perfection, when it becomes a large bush, having numerous Apple-shaped fruit. The fruit are very palatable, and liked by some, but must be used with caution, as they are liable to produce lethargy, which lasts some time, and is difficult to shake off.—RADDII, *Peterborough*.

THE CHANNEL ISLANDS' FIG.

I AM obliged to "G. S." for recalling this matter to my mind. There is no doubt whatever that he is right in stating that the common Channel Islands' Fig, so largely exported of late years, is not identical with the Brown Turkey Fig. I consider our Fig by far the finer, and the more valuable of the two, and it might be worth while for English market-growers and others to cultivate this sort more extensively. It has been known in these Islands for a very long period, and I should like to know when it was first introduced at Tarring, as it is cultivated there at present, and under what form of training and pruning it thrives at that place.

For my own part I believe that if the Fig tree be not closely summer-stopped, it would be best to leave it unpruned altogether, cutting clean out any useless shoots. Here the growers spread it out over a low platform of poles, and thus expose a large surface to the vertical rays of the sun. Many young

shoots, of course, assume a vertical position, but the crops are so enormous that they prevent any gross production of wood. Nothing is done but thinning out these verticals. Of course nothing grows underneath the tree, but then this causes the soil to remain unmoved—an essential matter with most fruit trees.

In seeking to identify the Channel Islands' Fig with the Brunswick, Turkey, De l'Archipel, or that capital sort Black Genoa, I sometimes thought the last identical with ours, but the ultimate decision must rest with Dr. Hogg. Let any one read through the chapter on Figs in the "Fruit Manual," and he will be possessed with increased respect for the care which has produced it.

It was with pleasure that I saw "G. S." had turned his attention to this matter; but why call our Fig the "Common Purple?" Why not "Channel Islands' Fig," considering its antiquity and increasing culture? May I, in the name of many here expectant, request a verdict?—T. Bréhaut, *Guernsey.*

STRATIFIED VINE BORDERS.

In page 22 your correspondent "A Gardener" considers it "exceedingly presumptuous" in me to offer any remarks on Mr. Wills's system of making Vine borders. Alas! poor me, and "J. S." and "H. S.!" what assurance we must possess to approach a subject treated on by a Jupiter! for evidently Mr. Wills, although I am sure entirely innocent of it, is so considered by "A Gardener." I saw and described a vinery and a Vine border, both of which I thought of high excellence and great simplicity. If your correspondent had also gone, and had exercised his eyes and his reason, he could have enlightened us as to any defects in the Bishop Stortford system. My motive for writing the article was that I hoped it would awaken some of our clever gardeners as to the feasibility of making Vine borders as Mr. Miller has done; in fact, I wished to know the opinion of some clever observer as to the merits and demerits of the system. I described as well as I could what I saw. "A Gardener" merely gives us his opinions; one of them I know to be fallacious: "The roots of the Vines (in an inside border), would go down not only many feet, but yards." Now, I know from long experience that the roots of Vines are most easily kept to the surface if they have annually surface-dressings. In a very sensible article (page 7), by Mr. J. Douglas, I am supported in my views on this subject.

Why the roots of Vines planted in a border inside should the second season find their way through the floor to a depth of 9 feet, as described by "A Gardener," is something very remarkable; there must have been something wrong at the surface. I know this is "presumptuous" on my part, but I can only refer to Mr. Miller's border, which I have no doubt will be copied by hundreds, who will not dread being "led sadly astray," as your correspondent fears. The truth is, what has been done and found good will be imitated; and so sound knowledge spreads, in spite of clever and fluent writers, which but few of us gardeners are; still, what we know we should endeavour to make known, however homely the style.

There are many good things in Mr. Wills's articles, but his stratification I cannot understand—a homogeneous border seems so much more in accordance with Nature and common sense. How Mr. Wills can command the roots of his Vines to finish the food in one layer before they seek it in another (see page 479), I am, I confess, entirely at a loss to conceive. To say to roots, "This is your food for 1867, in 1868 you may take the next layer," is something perfectly new. If they were sentient beings, and could understand the word of command, all would be well; but roots are eccentric, as described by "A Gardener," and I have no doubt would refuse to obey the dictum of even our most clever Grape-grower, Mr. W. Thomson, whose book all should read. The only method I have found fully successful in commanding the roots of Vines is by light, rich, summer-dressings, so that in the course of the summer the surface of the borders and the pots in which my Vines are grown is a perfect network of roots all running to be fed. This, not only with Vines, but with all other fruit trees, is the most perfect of all modes of culture; it is practised most undoubtedly by our good gardeners, but as yet not nearly so much known as so valuable and simple a mode of culture ought to be. "The million" ought to know that the surface of a fruit-tree border, or the surface round an isolated fruit tree, should never be stirred more than from 1 to 2 inches in depth, and only then if the soil be stiff and inclined to "bake" in summer, and that it should have annually in April a rich light dressing from 1 to 2 inches in depth. This opinion, I fear, your correspondent "A Gardener" will think "presumptuous." So be it.

In writing and thinking about inside borders for Vines, it has occurred to me that Grapes, Melons, and Cucumbers are all natives of climates very different to ours. There, Grapes ripen freely in the fields and hedges; there, the Melon and Cucumber are equally at home. Now, we should think a gardener a very original cultivator if he planted his Melons in the cold soil outside his Melon-frame, and trained the young fruit-bearing shoots under the glass; he would have to whistle for his Melons. It is true that the lignceous Vine roots bear the cold and moisture better than those of the Melon; but the reasoning for outside-border-making for Vines rests the same; it is, in fact, perfectly illogical in theory and practice.

In his second paragraph "A Gardener" seems to think I am poor and ignorant, and that I ought to have humbly written to Mr. Wills for advice under my peculiar circumstances. I fear I must sport a piece of brag. My experience dates long before that of Mr. Wills, and my purse is strong enough to allow me to spend £1000 on a Vine border without inconvenience if I felt inclined.—Vitis.

ARE AUCUBA BERRIES POISONOUS?

During the late severe frost I allowed two robins to live in my large greenhouse, where I have two Aucubas with ripe fruit. My attention has just been turned to the beautiful berries, and I found something had eaten off the pulp from the seed, and wondered what it could be. I thought a mouse had taken the brilliant morsel; but, on inquiry, my young men had found one robin dead in the path, and a post-mortem examination proved that it had been poisoned by eating the berries of the Aucuba japonica.

It is well that the greatest care should be taken to keep these most beautiful and brilliant berries from children or inexperienced persons—so tempting, yet so fatal. Being at present but little seen or known, yet likely to be produced on one of our most general, most attractive, and ornamental shrubs, it is necessary to promulgate this caution, to prevent, if possible further more unhappy results.—Jabez J. Chater, *Gonville Nurseries, Cambridge.*

[This is a timely note of warning; but it is not quite proven that the berries are poisonous. What became of the other robin? Might not the cold, or fighting, for robins are most pugnacious, have killed that found on the path? It is very desirable to give some of the berries to other birds and animals which will eat them, and thus prove whether they are poisonous.—Eds.]

EFFECTS OF THE INTENSE COLD.

As you invite your subscribers to let their experience be known through your Journal, I venture to speak of mine during the late intense cold.

I live on Earlswood Common, Redhill, thoroughly exposed to the south and south-west, partially sheltered from the north and east, situated on the clay, and lying low.

I have a good many Laurels, and upwards of 250 trees of the best varieties of Roses. The thermometer on the 3rd was at 4° about 12.30 A.M. It sank much lower I believe, but I did not register it, though I know it was below zero at a friend's in the neighbourhood. This is the result: Laurels are all bronzed, though not killed outright. Roses are all right, except Pavillon de Pregny, which seems much put out by the frost. Madame Furtado, supposed to be tender, I believe to be very comfortable and unharmed; Rushton Radclyffe as well as any. Isabella Gray and Maréchal Niel (mother and child), grow in the south side by side. Isabella is much cast down, and looks wrinkled and aged; Maréchal Niel looks as well as he can possibly do; and yet both were unprotected, except by a little litter at the roots. The trees are all newly planted. Moiret, Comte de Paris, Devoniensis, Homère, Du Luxembourg, Louise de Savoie, and Narcisse, all against the house facing the south, seem happy and well-to-do enough. At this I cannot but rejoice, as I was reared in the belief that Teas cannot stand 32° of frost. Of course I cannot say whether their blooming will be affected, but if this depends on the condition and appearance of the wood at present, I do not think they will disappoint me. I can let you know this if you care that I should. I shall hope to see

the experience of others in the next Number of the Journal. —A. B. A.

[We shall be much obliged by the future notes you offer; and we shall also be obliged by notes from other correspondents on the effects of the intense cold.—Eds.]

NOTES OF AND ABOUT ROSES.

(*Continued from page* 3.)

3. French Roses with English Names.—When a French grower obtains a good Rose from his seed-plots, which, according to his own estimate of it, he describes as "*Variété extra, superbe, très belle, remarquable, hors ligne*," &c., it is, of course, offered for sale as soon as a stock of it has been propagated; but it is too often the case that others inferior to it in all points, and therefore not desirable, are sent out with it, coupled with the flattering but deceptive descriptions for which the French language affords great facilities. This is an especial failing of an eminent Paris nurseryman, which cannot be otherwise than detrimental to his reputation; for although we are indebted to him for some of the best Roses in cultivation, his best productions have been, for some years past, invariably accompanied with others that have proved worthless and disappointing. There is an old French proverb which runs thus—"*On voit d'un autre œil que ne voit son prochain.*" If we loosely interpret this to mean "Each one takes his own view of the matter," and accept it as a truism, we must make allowance accordingly; but there remain some obstinate facts, such as were shown in the previous communication.

Many of these inferior kinds have English names attached to them; they are, therefore, sure to attract attention in this country. There can be no wish to depreciate the *politesse* of our French friends; we readily acknowledge the distinction they pride themselves on, of being the most polite people in the world; but can we receive with a good grace compliments that have a tinge of the ridiculous, and, as intimated by one of our oldest rosarians, accompanied with an "*arrière pensée*," connected with the sale of the varieties to which we find honoured and respected names affixed, but which on trial we cast aside with a feeling of vexation, or something stronger?

A perusal of the French lists for the five years, 1861-5, will afford sufficient evidence of this. From them I glean the following, with the names of the raisers:—

Roses.	Raiser.
James Dickson	Eugène Verdier.
Richard Smith	"
Mrs. Charles Wood	"
James Mitchell (Moss)	"
John Crauston (Moss)	"
George Paul	"
John Nasmith	"
Souvenir de William Wood	"
Rushton Radclyffe	"
John Keynes	"
William Bull	"

I am not certain that M. Eugène Verdier is the raisor of the last two; he had, however, a share in the "*édition*."

Robert Fortune	Ducher.
Princess Alice	"
William Paul	Guillot père.
Mrs. Freeman	"
Souvenir de Lady Eardley	"
Mrs. William Paul	Charles Verdier.
John Fraser (Moss)	Granger.
John Standish	Trouillard.
Reynolds Hole	"
Mrs. Standish	"

The last two I believe were sent out by Mr. Standish.

Peter Lawson	Thomas.
John Veitch	Levêque et fils.
Rev. H. Dombrain	Margottin.
John Waterer	Portemer.
Arthur Young (Moss)	"
Henry Martin (Moss)	"
Viscountess Douglas	Gonod.
Deuil de Prince Albert	"
Lady Emily Peel	Lacharme.
Charles Wood	Portemer fils.

I have taken the liberty of substituting the dear old Saxon "Mrs." for Madame, believing that the worthy ladies represented in the above list, being Britons, are not ashamed of their native land.

Of the thirty-one above named three only are in Mr. Radclyffe's list of the best Roses—viz., Mrs. Charles Wood, Mrs. W. Paul, and Rushton Radclyffe. The last, although worthy of the place assigned to it as a first-class flower, is, to my great regret, a failure here from defect of constitution, and, like Gloire de Santenay, Furtado, and François Lacharme, must be given up in soils not naturally suitable for Roses.

It would be an injustice to omit any honourable exception to the majority of the French Rose-growers as regards the number and quality of their productions: M. Charles Verdier has sent out but few Roses from his establishment, but these have in nearly every case proved to be of great merit. Besides Mrs. W. Paul, above mentioned, we are indebted to him for Duchesse de Caylus, Vicomte Vigier, and François Lacharme, as noticed in the previous paper; his announcement of Paul Verdier for the next season may, therefore, be anticipated with some degree of confidence.

Of the remaining twenty-eight varieties there are three others that may be considered deserving a place in the rosery, their habit and colour being good; but their form is not up to the standard now raised so high by such flowers as Lord Macaulay, Chabrillant, Senateur Vaisse, Madame Victor Verdier, Duchesse de Caylus, and others. These are John Keynes, Charles Wood, and Viscountess Douglas; the last is surpassed by others of its colour.

The others can be disposed of in a few words. Peter Lawson is fine of colour, but too often shows a yellow "eye." Mrs. Standish is a pretty light rose, but uncertain, and only opens well in favourable seasons. Reynolds Hole is a pardonable mistake; let us hope that our amiable and respected rosarian may soon have a representative worthy of him in the Queen of Flowers, to whose interests he is so loyal and true.

Bourbon Roses are not in very high favour as a class, always excepting Malmaison, Acidalie, Baron Gonella, and to which may be added, with a slight qualification, Louise Margottin, or Madame de Stella, Celine Gonod, Sir Joseph Paxton, and Rev. H. Dombrain, the last two being the best of their colour in the class with English names, or any name.

Moss Roses are too rarely seen either in the garden or on the exhibition table; yet, what more beautiful than the old Crimson and its variety called Lanei? In the above list are five Moss Roses. Is there any one between Land's End and John o'Groat's house who knows anything about them? It would be a waste of space to offer any comment on the others given in the list, although they represent names most distinguished in English horticulture.

4. Nomenclature—Abuse of Terms.—It is quite reasonable that the raiser of any new variety of flower should assign to it such a distinctive name as his fancy or interest inclines. Generally the appellatives given to English flowers are well-selected and short; for, undoubtedly, short names are the best and easiest to be remembered. When we turn to the nomenclature of French Roses we often find the opposite of brevity, in some instances no less than six words being used to designate a single variety. We cannot complain of the grand array of princes, dukes, duchesses, marshals, generals, and other high and mighty personages when they represent known and distinguished individuals; but we do stumble over such appellations as Souvenir de la Reine d'Angleterre, Triomphe de la Terre des Roses, Souvenir de Bernardin de St. Pierre, La Baronne Pelletan de Kinkelin, and which when uttered by those unacquainted with the French language have a very odd and even ludicrous effect; still more so the contractions very often and naturally applied to those lengthy designations for which our French neighbours appear to have an especial aptitude. I know of an instance which afforded me much amusement when it occurred. An honest, hard-working, but somewhat illiterate gardener in this neighbourhood, whose ideas of orthography are rather misty when any departure from the strictly phonetic principle is observed, labels his Roses for his own and others' recognition. When the name is copied from a catalogue all goes on rightly enough; but a catalogue not being always at hand, our friend is left to the resources of his own memory. Some very curious derangements are the consequence. The instance that amused me was the well-known Général Jacqneminot, which was marked General Jack-me-not, the syllables being distinctly separated. It is very usual to recognise that Rose about here as "General Jack," Charles Lefebvre as "Charley," and Jules Margottin as "Old Jewels." Mr. Radclyffe knows similar cases, I believe. What Xavier Olibo will become it is not easy to guess, unless, as "D., *Deal*," conjectures, "Holybones."

These cases are simply absurd, but not altogether unnatural, nor inexcusable. Much more deserving of notice, in my opinion, is the abuse of a term that has now been many years applied—I mean the term Perpetual, as used to designate what

is now the most important section of Roses as distinguished from Bourbons, Noisettes, and other Hybrids. It has been more than once correctly remarked that this term is an abused one; then why perpetrate it? The word perpetual not only does not express what the Rose is, but also it is not the equivalent for the word the French use—viz., *rémontant*. Now, the word *rémontant* does express, as nearly as it is possible to find any word, the idea intended to be conveyed; but as we have no equivalent English expression for it, it is worse than ridiculous to make a floundering attempt at translating a word which admits of no translation. The usual procedure in such cases is to adopt it; there can be, therefore, no more impropriety in designating this particular section of Roses Rémontant Hybrids than in calling a fiddle a violin. The French themselves make no attempt to translate such words as "jockey," "shunt," "wagon" (with one *g*), "milord," &c., although these words contain letters and sounds the very opposite of their adopted orthography and pronunciation. In the same way we accept such phrases as *sang-froid*, *aide-de-camp*, *beau-monde*, &c., in their original signification, without essaying to render them into English.

Upon the ground of common usage, then, I venture to suggest that the term Rémontant Hybrids should be substituted for the incorrect "Hybrid Perpetuals."—Adolphus H. Kent.

(To be continued.)

ICE CELLARS.

I never knew until I read Mr. C. Short's communication that it required any great care to keep ice in an ice-well, where such a well is high and dry, provided you put in the ice when it is in pretty good order.

I have to keep ice in what were the cellars of the old mansion. There is a lake running close up to the passage door, and the water rises within a few inches of the floor. The ground about the cellars is also very wet and boggy. The walls are what I call dry walls, being built without cement or mortar; and the roof, a span, is of slates. The height from the level of the ground to the top of the roof is 6 feet, and, in fact, there is more roof than cellar. Any one accustomed to ice-keeping will at once perceive that it is very difficult to keep ice in such a place. Do what I would, or rather the men, for I allowed them their way, the ice always dwindled down to a few barrowfuls by August, and we never begin to use the ice before that time.

I ought to have stated that we have three doors to the cellar, and that the passage is 20 yards long. Any one can imagine the draught of air that rushes towards the ice when a man uncovers those three doors and runs up and down the passage twice or thrice with a basket of ice to fill his barrow outside.

I asked the men if they never covered the slates or roof. "No," said one, "for the water would lodge in the roof and make it damper than it is." "Do you not fill the cellar up to the top of the roof with ice?" The answer was, "No; only level with the top of the cellar, otherwise we cannot get the straw in.

As the ice always diminished so much by August, I thought it was time I had my own way; so last year I had the small cellar filled up to the top of the roof on the 5th of March with the worst lot of ice I ever remember carting. I then had the roof covered outside with 18 inches of soil. I opened the well early on a frosty morning in April, when the ice had sunk a little, and gave it a good soaking of water, which froze as it was poured in, and then covered up well with straw. The result was I had a better supply out of one cellar than I ever had out of two before.—T. Elcome.

Crystal Palace.—There appears to be every probability that the portion of the Crystal Palace which was destroyed by the calamitous fire on the 30th ult., will speedily be restored to its original perfection. The shareholders and season-ticket-holders will, it is understood, contribute largely to this object; and a movement has been originated by Mr. Francis Fuller, one of the founders of the Crystal Palace, to promote a public subscription in aid of their exertions. He believes that 1,500 persons can be readily found to subscribe or collect £100 each, which would suffice to restore a building which may be said to be of national importance, and which has so greatly tended to the refinement and social progress of the people. Many offers of sums of this amount have already been received; an influential Committee is being organised, and it cannot be doubted that all classes of society will cheerfully contribute, according to their means, to accomplish the desired object. M. Blondin has addressed Mr. Fuller, expressing his deep regret at the loss which the public have sustained, and his desire to give, as his contribution, two gratuitous performances on the high rope in the Crystal Palace, in aid of the Restoration Fund, which will, in all probability, produce a considerable sum.

THE ROYAL HORTICULTURAL SOCIETY'S EXHIBITION AT BURY ST. EDMUNDS.

The Royal Horticultural Society's Exhibition at Bury St. Edmunds in July promises to be a great success. Chiefly through the exertions of Mr. D. Fish the guarantee fund amounts to more than £1160, and the special prizes to nearly £260. The schedule of prizes will now soon be issued. They vary from £7 to £1 for stove and greenhouse plants in small numbers—from six to twelve specimens, so that the classes of competitors may be very inclusive. Fuchsias, Pelargoniums, Gloxinias, Achimenes, Liliums, Petunias, Ferns, cut Roses, Pentstemons, Delphiniums, Fruits, &c., are all to be exhibited in small numbers for the same good reason.

The special prizes are as follow:—

	£	s.	d.
Royal Horticultural Society of London, for Palms and Fine-foliaged Plants	25	0	0
The Ladies of Bury, for Orchids, a £20 gold cup and one of £5	25	0	0
The Town of Bury, for Ferns, three cups, £15, £10, and £7..	32	0	0
Ditto, for Lycopodiums	5	5	0
Ditto, for the best window plant grown by a cottager, a silver watch	3	3	0
The Borough Members, for best and second-best Hand-bouquets for Ladies, 5 guineas and 4 guineas	10	10	0
The Rev. Frederick Cheere, President of the Bury Horticultural Association, for an Essay on the Diseases of Plants	10	10	0
Eye Horticultural Society, for the best 24 Roses Grown by an Amateur, a Member of any Horticultural Society in the County of Suffolk	10	10	0
Woodbridge Horticultural Society, for the best 12 Picotees Grown by an Amateur	5	5	0
Stowmarket Town, for the three heaviest bunches of Grapes, a gold medal	10	10	0
Ipswich Town, not decided	25	0	0
Thetford Town, not decided	10	0	0
Suffolk County, not decided	25	0	0
Suffolk Gardeners, for the best 12 Roses Grown by a Suffolk Gardener	7	7	0
Ditto, for the best 12 Seedling Variegated Pelargoniums ..	5	5	0
The Proprietors of the *Gardeners' Chronicle* a silver cup, value £20, for the best Collection of Fruit and Vegetables—namely, of Fruit, any Five of the Following Eight Kinds, one dish of each—Grapes, Melons (two Fruits), Strawberries, Gooseberries, Currants, Cherries, Raspberries or Apples (of the Crop of 1866); and of Vegetables any Eight of the Following Fourteen Kinds, one basket or bundle of each—Peas, French Beans, or Scarlet Runners, Broad Beans, Cauliflowers, Cucumbers (brace), Summer Cabbages, Early Carrots, Turnips Artichokes, Onions, Spinach, Rhubarb, Potatoes, or Mixed Salading. Open for competition amongst all Comers	20	0	0
The Proprietors of The Journal of Horticulture, for the two best Desserts, consisting of not less than Seven Kinds of Fruits of 1867, arranged as for the Table, combining Quality of Fruit with Taste of Arrangement. Open to Gentlemen's Gardeners and Amateurs only. Two First Prizes of the Value of 10 guineas each	21	0	0
N.B.—Only one of these Prizes can be taken by the same person.			
Mr. Samuel Barrett, Hardwicke, for the best Collection of Vegetables Grown by a Cottager, a three-guinea watch	3	3	0
For the best Kept and Cropped Allotment, 1½ guinea; Second ditto, 1 guinea	2	12	6
	£258	0	6

There are also numerous prizes for cottagers' plants, fruits, cut flowers, and vegetables.

PLANTING PEAR TREES.

I have to thank "T. R." for his criticism of my paper on Pear culture, and beg to assure him and your readers there is an error of mine, or the printer's, at page 460, of No. 299. "Holes 9 feet square should be dug, &c.," should read "Holes equal to 9 square feet should be dug, &c." The difference, then, between the holes which I recommend and those advised by "T. R." is not very material. "No hole in any cultivated garden," writes "T. R.," "need be more than from 3 to 4 feet in diameter, and 20 inches deep," and these dimensions, I may

add, are twice as wide and deep as I find necessary for planting ordinary-sized trees, such as those obtained from nurseries, when the ground has been properly trenched previously to planting. In trenched ground, all the hole that need be made is one wide enough to admit the roots without turning their points up, down, or aside against its sides; and it is deep enough if it allows of the fibres being covered with 3 inches of soil. If "T. R." finds a hole 20 inches deep necessary to plant a Pear on the Quince stock, I must say he plants much deeper than I do, or his ground is of that uncultivated and unprepared character as to require holes "9 feet square" in addition.

"T. R.'s" other objection is to covering the junction of the stock and scion with 3 inches of soil, for this, "as fully pointed out in your columns last spring, pages 180, 193, leads to injurious consequences, for, besides placing the tree by far too deeply in the soil, it induces the putting forth of roots from the graft, by which the effect of the Quince stock in giving fertility is destroyed." Who, last spring, pointed out the injurious consequences of covering the junction of the stock and scion with soil? "T. R.!" His conclusions based solely on his having some Louise Bonne Pears on the Quince rooting from the part of the scion covered with soil, the trees ceasing to be productive, which would lead to the inference that Pears on the Pear stock are not so fruitful as these on the Quince stock. Now, I have trees of the Louise Bonne on the Pear stock, that annually produce heavy crops of fine fruit; and we have scores of trees, both on walls and in the open ground, on Pear stocks, producing an abundance of fine fruit: hence it follows that the Pear on the Pear stock may be fruitful. I thought that the one great merit of the Quince, as a stock, was in giving early fertility to the Pear, not greater or more extended fertility than the Pear stock; but, if I understand "T. R." aright, a Pear rooting from the part covered with soil, it being worked on the Quince, ceases to be productive, to which he should add, Unless the tree is not to be kept so dwarf and stunted as it was before, and the soil is not favourable to the fertility of the Pear on its own roots. In my soil it does not in the least matter whether the Pear tree be fed by its own roots or those of the Quince; once it commences bearing it continues to crop well afterwards, and can be kept very dwarf by a moderate amount of summer-pinching. The soil is a rather light loam, about 15 inches deep, on gravel. On heavier and deeper soil the Pear tree may root so deeply that the effect of the Quince in giving fertility may be destroyed, for the Quince has a more shallow disposition of roots than the Pear: hence the tree rooting from the graft will have a tendency to wood growth rather than the formation of fruit-buds, the good offices of the Quince in giving a more dwarf growth being destroyed.

"T. R." accepts as proven that a Pear tree covered with soil above the junction of the stock and scion does root from the latter. I must allow that I have seen that; but I cannot admit that it invariably occurs, for with some kinds of Pears it is the exception rather than the rule, and is in most soils a tardy process, though in some it may be general; but such I have not found, and I have had experience of Pears on Quince stocks in six different soils and situations.

When I find Pear trees on the Quince, with the junction of the stock and scion covered with soil, rooting from the graft so freely that their bearing, health, and longevity are interfered with and impaired, I will gladly make a public recantation; but until then I must be excused covering a very ungainly swollen junction, and exposing no part of the stock to the drying influences of the sun and air, but using it as a root-forming, consequently food-collecting, medium. In the meantime "T. R." will, perhaps, inform us whether budded trees root as freely (or at all), from the Pear as those that are grafted, and how soon rooting may be expected to occur after the junction is covered with soil. I have my own particular experiences on these points, and reserve myself for confession at a fitting time and place.

"T. R." concludes with a recommendation. I may do so likewise; and it is—Should those having Pear trees on Quince stocks, with the swollen junction hidden by soil, perceive them making an undue amount of wood not to be restrained by summer-pinching, lift these in autumn and plant them, after searching carefully for roots from the Pear where covered with soil, removing these, if any, so that the soil will reach only to the swollen junction, and the trees will be as fruitful as ever; and if your soil is not unfavourable to the Pear, care nothing about the roots from it, for no tree lives so long, is so healthy, or so well fed as by its own roots; also to gain fruitfulness, plant on a raised mound, by which the roots will be kept near the surface, and one of the main advantages of having trees on Quince stocks will be secured.

Finally, though my stock of "Pear trees, old and young, on Quince stocks," is not equal to that in "any other garden in Europe," I have had sufficient experience to prove that I recommend a *sound*, but I should not feel justified in considering it "the only sound method of culture." Others have a right to their conclusions, and experience is fully entitled to weight. —G. Abbey.

OUR VINES.

(*Continued from page* 25.)

For a long time we had looked forward to the fruiting-year with great interest. Should we really have Grapes? Would those fine buds develope into bloom, or spend all their energies in leaf and cane? We could but wait and hope; but we waited with an eagerness only amateurs can feel.

Our Vines broke in March, all but Lady Downe's, she put forth shyly as if only half knowing what she meant to do; but then it did not matter much, for we knew she was a rampant grower and took long strides. To our impatient waiting it seemed as if the blossom would never show itself. After weeks of anxious, almost hopeless inspection, the bloom made its appearance, at least what we thought would turn into bloom—a round hard lump, like a great Cob nut, covered all over with minute excrescences. Out of this lump we supposed the bunch of Grapes would come; but day after day we looked in vain for any sign of progress. If there was any growth it was all internal, did not manifest itself to our closest observation; and yet the Vine was not idle, the work was going on though we saw it not. After long waiting these little excrescences seemed to part from each other, and form stalks or stems of their own, so that as time passed the contour of the future bunch was fully shewn. But, then, were these the very berries to enlarge into the future Grapes, or simply the flowers which must first open before the fruit could form? In our ignorance we did not know, could not make out. We had grown Vines for years at South Field, or rather the gardener had, yet could not remember ever having seen them in this stage of growth. To be sure our pomological curiosity had never carried us so high. We wearied ourselves trying to find out from books, sought long, but the bit we wanted we could not find. Cousin Herbert said the "whole lot of gardening writers were donkeys; they wrote for themselves so that they might tell nothing but what was already known." Our Vine doctor laughed and said, "Some things were so simple people never thought to write about them" However, the question was settled, the bloom had not yet opened, and it must do so before any fruit could be.

"It is my firm opinion there never will be any fruit," said Cousin Herbert.

"Well, I always said the Vine border was much too rich," said Uncle Tetley; "as George says, you will grow plenty of coarse leaves minus fruit."

"I do not reckon much on what George says," said papa; "he is amazed at your success, and is afraid your Vines will one day be better than his own. As for the Vine border being too rich, what is it when they bury dead horses in it?"

"Disgusting in the highest degree," said Aunt Margaret; "I would never eat another Grape as long as I lived, if I thought that was the usual practice."

"Not very pleasant certainly to any one troubled with suggestive ideas," said Cousin Walter.

"But, what is to be done?" said Cousin Herbert. "I would not like to be without fruit this year. We have waited long enough, never mind the canes whether they be thick enough, or ripened enough, or strong enough, only let us have fruit."

"Never mind what people say about your border," said our Vine doctor very quietly. "I assure you it could not be better, and I dare venture to say you will have half a score bunches on every Vine. What is the good of putting yourself into such a state, and keeping me in a perpetual fever by your doubts? I am half afraid I shall go over the line yet. Put on a little more heat, do not open quite so soon, and shut up earlier, and you will have fruit, fine fruit too, this year. The bloom wants a little petting to open, not that the flowers are very brilliant or very fragrant, they are neither the Glory Pea of New Zealand, nor Stephanotis. It is only the after-results that make the bloom of value."

So Uncle Tetley would not have the house opened until much later in the day; indeed, he would not have it opened in

the least unless the day was very sunny; and we were not surprised when, a week or two afterwards, Cousin Walter came running in, saying, "The Vines had the red spider; all the high-up leaves were all but coloured with them." What was to be done? We dare not syringe for fear of the bloom, which was just opening.

"Sweep them off with a little brush," said Janet.

"You could almost as soon empty the sea with a bucket," said Cousin Walter.

So there was nothing for it but letting the two grow together for a time. When the berries were once fairly set we could keep down the insects with syringing; but the red spider turned out to be only brickdust, to our great joy and Cousin Walter's annoyance.

During May the bloom opened, but the berries set slowly; they seemed to have a predisposition to twirl and twine themselves up, and we had our fears lest they should run right off into tendrils, as they had done the year before. Again we hung up our little weighted bags on the bunches and tried to keep them down, but to our great disappointment much of the bloom dropped off, leaving only a bare twisted stem.

After all our fretting and worry we had a great deal more fruit, every one said, than we ought to have had the first year. The berries when once set enlarged rapidly, every week there was even measurable difference in the breadth and length of the bunches. There was no looking back now, they pushed on as if vieing to outdo each other—went at the rate tired horses go when their faces are set homewards. The number of bunches had to be lessened; on several of the Vines they were growing too near each other. Cousin Herbert said "he would thin them." I am sure his heart ached the while. It seemed a cruel thing to cut away the very good we had waited for so long.

After this there came the time of thinning out the berries. A pair of scissors was bought for the purpose. Cousin Herbert commenced, but soon gave up, saying "the operation was too delicate for his thick fingers." Papa said, "he would send George over to do it for us." Kate and I declared "the berries should go unthinned first, we would not have him! one professional was enough to work under." Then Cousin Walter would try, but he cut away right and left, without ever thinking or looking what he was doing; taking off whole shoulders at one snip, or a nice cluster of berries that had ample space to enlarge in. It was too much trouble to pick out the poor, little, thin, crowded berries clustering away out of sight behind the big ones; "Besides," he said, "it was not fair play, let the dwarfs have a chance of becoming giants." Then Aunt Margaret would try, but she pricked, and bruised, and cut them in all manner of ways. The "syrup" Janet called it, but it was more akin to vinegar, dropped upon her peach-coloured dress and stained it. "I cannot think how it is Kate, dear," she said, "but I am always cutting the berries instead of the stalks." Then Uncle Tetley would try, and he chose a sunny day for the performance, and very sunny it was, the glass standing up at 80°, though every breath of air was let in that could be—doors, and windows, and ventilators wide open. Poor Uncle Tetley did not do much—ten minutes and he was done for, and more than half the time he spent rubbing the perspiration from his red face with his white handkerchief; he puffed, and sighed, and finally threw down the scissors, and rushed out into the cooler fresher air, exclaiming, "Every man to his trade, I would rather pay a gardener £5 a-week than do that. It's murder complete! I believe, Margaret" (for, of course, Aunt Margaret was all sympathy), "I am so melted I shall never stiffen again."

Then Kate and I did what we could in some fashion or other. We tried to do it in white kid gloves, for Janet said every berry we touched would be injured, but our hands became hot, and the gloves so stuck to them we could not move our fingers, so were obliged to tear them off. It was neck-breaking work and very hot, though we chose the coolest time of the day, and did not do much at one time. "I am not sure, Maud," said Kate, "which is best or worst, these vapour-baths at sunny midsummer, or lonely vigils in cold, and dark, and dust in midwinter."

All went on well for a few weeks, then the Vines, or rather the berries, seemed stopped in their progress, as though they had received a sudden check, or something or other which had frozen-up their energies, not that they appeared to be ailing or growing bad, they were simply standing still. It might be they were resting after their long hard work. The rest was long enough to awaken our fears. We had heard of Grapes all at once ceasing to grow and never ripening. Surely such a fate was not coming to ours? There was nothing for it; we must read-up again our old books, and find out the best thing to do under the circumstances. At last we decided that a syringe in warm water every afternoon when shutting-up was the best remedy. Perhaps we followed this too closely, for it brought on what George called a fatal disease. Many of the berries were covered over with small specks of brown. These specks spoiled the smooth uniform greenness of the berries, even if they did not lead to anything worse. George called it the mildew or mould, and said it had come with the "absurd practice of syringing late in the day. I tell you what, Miss, they never will be good for anything, and Mr. Herbert may cut them all off at once and carry them away. If he do not, the canes will be infected."

"Whatever it is, I am sure it is not mildew," said Kate, when I told her what George said. "There is no mould or fungus about it. Why, Herbert can take it off with his penknife, and there is no mark left on the berry underneath."

"Then you do not think I need fetch up the wheelbarrow yet," said Cousin Herbert.

"Not for the mildew," said Kate. "I am afraid we are going to have something worse. Several of the bunches on Lady Downe's are shanking."

"Shanking! Dear me, how learned we are!" I said. "Pray what does that mean?"

"Why, the stem or shank dries up so that it will not feed the berry, and then the berry becomes wrinkled, gets less instead of bigger, and never ripens."

Here was a real grievance we all went in to see, for Lady Downe's was a general favourite. Four of the bunches had an old, dried-up, shrivelled look, it was very possible all the others might become so. What should be done?

"I think, Kate, we had best cut them off at once, they are not at all respectable-looking," said Cousin Herbert.

"No, wait a bit," said Uncle Tetley, "they may improve. In my opinion they are only scorched by the sun, they look as if they were pinched of water."

"They seem to be always ailing," said Janet, you cannot be managing them right."

After this there was nothing for it, we must send for our Vine doctor, we could not rest without. Janet said he would laugh at us and Cousin Walter, that we were "very silly, for it might turn out to be nothing after all."

"Well, I dare say we can get over both these troubles," said Kate, "better than losing our fruit."

So he came, and very gravely looking round exclaimed, "What is the matter you should send for me all this long way? You will drive me mad yet. I see nothing amiss with them."

Then we pointed out the shanking and the brown spots.

"Why, the fact is just here, you girls want to do things better than other people. Did you ever know any one rear chickens without losing at least fifteen per cent., and I assure you few people can grow Grapes without some going wrong. Every flower that opens will not set into a berry, the Queen's own gardener could not make it; and every berry that sets will not grow to its full size; and every full-sized berry will not always ripen equally to the same depth of blackness. As for Lady Downe's, she is rather given to shanking, and then, perhaps, we have let her have rather too much to do. She is a fast worker, and yet that is no reason why she should be put upon. You see she has twelve to fifteen good sound bunches left."

"Shall we cut off these unsightly ones and so relieve her?" said Cousin Herbert.

"Well, no. I am not sure it would. You see the Vine has got over the pull and the strain, and is now ready for the down-hill work, and yet they do not look well."

"But, then," said Aunt Margaret, "what is this on the berries? My brother's gardener thinks it is the mildew, and that it will destroy all the fruit both for this year and next."

"Nonsense, it is no such thing; it is caused by syringing with water that has stood in an iron cistern. It is rust from the water settling on the berry; and, indeed, you must not syringe any more, for these berries are coming to their full size fast, and will soon be showing colour. You must be very careful for the next two months; water your plants as little as possible, and then early in the morning; keep a warm, dry, airy house; if it rain or be windy do not open, but when the sun shines open freely as much as you can; if a cloud go over and it is cold, close all up again."

"That is certainly a great deal of trouble to be constantly running in and out, always looking for wind or rain-clouds. I am sure a gardener could not do that," I said; "some of his work might be mowing a lawn half a mile away."

"Well! But if to grow as good Grapes as any in the land is his hobby, he will take care his work at such hours of the day is not even half a quarter of a mile away. That is where many gardeners miss it—they will not give the thought and trouble necessary; they will give work, hard work too, but not thought. Never you mind the trouble, Miss Kate, it is only for a time; give them plenty of fire on dull, cold, wet days, and plenty of fresh air on clear, warm, sunny ones, and you will have first-rate Grapes yet, though your poor Vines have had nearly every malady under the sun."

So once more we sailed out into smooth water, our Vines grew and flourished; the bunches enlarged, they were tied-up by the shoulders, opened out, and made the most of, and there was a bright glow of health about them as though they had passed through all their troubles and were the better for it. Lady Downe's seemed to carry her fifteen bunches (for we had cut away the ill-looking ones), with regal pride. It seemed to be no effort to her to do it, she might have done more and not suffered in the least. What great, round, fleshy, plum-like berries they were, growing out of a thick stumpy-kind of stalk!

It was a sort of impulsive Vine, this Lady Downe's, making all its growth by fits and starts; and when the colouring-time came the berries presented the oddest, strangest appearance, just as if they had been dashed at here and there with a black-paint brush, a regular daub with fine splutters all up and down over the green. These black patches increased until all the berries were dark. Aunt Margaret said "they looked as if the sweeps had been in during the night shaking their soot-bags."

Then the Black Hamburghs, they coloured as they had grown, by a slow but sure process, never having to turn back, for they never made a false step. Uncle Tetley said "they did their work by the day, not by the piece, and it did not seem to matter a great deal whether they did much or little." They changed gradually from a deep green to a pale, delicate, Bohemian-glass colour, becoming darker and darker as the weeks passed until they were coal black.

Then the small round berries of the Reeves' Muscadine formed themselves into small round bunches, changing very little in colour as they ripened, brightening up, but not much, as they took the last faint tinge of yellow. Then the Muscat Hamburghs, with their long, slender, oval berries, making long, slender, oval, most graceful, most exquisite bunches. There was sparkling brightness about them, reminding one perpetually of the poet's line—

"A thing of beauty is a joy for ever."

The heavy berries hanging on their slender stalks seemed like transparent bags into which some invisible hand poured coloured nectar, drop by drop, every added drop showing a deeper colour, and a higher tide-mark, until the little bags were brimfull. With pleasure not unmixed with wonder we watched their onward growth. If we had spent idle time before, we spent much more now.—MAUD.

(To be continued.)

VINE BORDER COMPOST.

I THANK "FAIR PLAY" for noticing my incomplete quotation from Mr. Pearson's book. I feel that I ought to have said *some* kinds of green turf, &c. I had been reading Mr. Thomson's book, and thinking that his method of preparing turf was much better than using it green, as recommended by Mr. Pearson. Mr. Pearson is always honest in all he says and does, and I have no doubt that he has found his turf to be good even when used green, as the fine loamy pastures in his neighbourhood give a turf of first-rate quality. I happen to live in a district in the south where green turf is a most dangerous article to employ, as that from light calcareous pastures is so full of grubs, from those of two or three species of cockchafers to those of different species of Tipula, that the roots of all trees and plants are soon destroyed if it is used in a fresh state.

I once planted some young fruit trees on some light calcareous soil which had for many years been a pasture, thinking that by turning in the turf I should not have occasion to use any manure; the trees suffered fearfully, grubs without end, aided by wireworms, having barked and cropped the roots to a great extent, hence my condemnation of green turf as a portion of any compost, for inexperienced persons might use it and suffer as I have done. Mr. Pearson is quite right in recommending his fine green turf, but I think a caution should have been given.—FORWARDS.

PEAR CULTURE.

(*Continued from page* 27.)

BORDERS AND SOIL.—The borders for Pears should equal in width one-half the distance apart at which the trees are planted, and should in no case be less than 12 feet wide. For trees upon the Quince the border may be 3 feet less in width than for those on the Pear stock.

In depth the border should not be less than 2 feet, nor exceed 2½ feet. In all cases it should be well drained; and where the subsoil is of a cold wet nature, in addition to draining there should be a concreted and rubble bottom—that is, the bottom should consist of a layer of rough gravel or lime riddlings 3 inches thick, rammed quite hard, then of another layer of lime riddlings half the thickness of the first, and made as hard as a barn floor; and lastly, of another thin layer of equal parts lime riddlings and fine gravel, made to the consistency of thin mortar and rammed hard after it has stiffened. In this way a barrier will be formed through which the roots will not pass; and 9 inches of rubble upon it will afford free drainage for the water passing through the soil, add to the warmth of the border, and check long sappy growths, which are never productive of fruit.

When it can be obtained the top spit of a rather strong loam is the soil to be preferred, and if the turf be taken with it no manure need be applied. Where the soil is of a light nature one-fourth cool manure may be added—cowdung is best. The border should be drained to a depth of not less than 3 feet, and where the soil is of a loose nature one drain along the front, or 4½ feet from the walk, will answer; but where the subsoil is adhesive there should be a drain 1 foot from the wall, and another 9 feet from it outwards towards the walk, both running parallel with the wall. These drains should have proper falls and outlets, and be formed of three-inch drain-tiles.

Fig. 1.

The ground in all cases should be trenched to a depth of 2 feet, and, where the soil will allow, 3 feet is not too deep. If a proper border, which is always the best and cheapest in the end, is to be made, a layer of sods may be placed on the rubble; and the earth, as it is brought, should be placed with the grass side downwards, till 9 inches or a foot higher than the depth desired, so as to allow for settling, the amount of which will be equal to about one-third of the depth of soil. The soil should not be trodden upon, more especially if the ground be at all wet, and the worst time of all to make fruit borders is when it is so; dry weather ought to be chosen.

In wet soils and cold situations much may be done towards rendering the soil drier and warmer by raising the border. Unfruitful trees are chiefly those in borders not properly drained, and where no attention has been paid to preventing the roots going down too deep; but if these borders had been raised, well drained, and shallow, and if means had been taken to prevent the roots going down, the trees would have been fruitful and healthy. Where the subsoil is of an adverse

nature—that is, wet or sandy, the place where the tree is planted should be made quite impenetrable to the roots in a downward direction. They have a disposition to go down by the wall, and that may be prevented by concreting a space equal to 3 square yards by the wall where the tree is to be planted. The concrete should be quite close to the wall, and about 15 inches from the surface. Some place a flagstone or slates immediately nnder the tree by the wall, and this to some extent prevents the roots going down, and induces them to spread themselves through the border.

Fig. 1 will serve to illustrate my views as to borders where the soil is heavy, the subsoil retentive of moisture, and the situation low and wet, subject to spring frosts, as low situations usually are. To prevent the roots going down, the bottom of the border is concreted at *a a*, and drains are laid at *b b b* to carry off superfluous water. *c c* Is the border 2 feet deep, formed of rather strong loam, the top spit, without admixture. *d* Is the ground level; so that the borders, *c c*, for trees against the wall, and at *e* for pyramids and bushes on the Quince, are considerably raised.

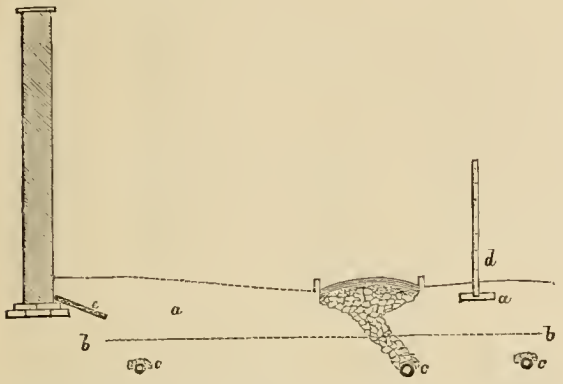


Fig. 2.

Fig. 2 is intended to show a border where the situation is not low nor wet, and the subsoil loose or free, as sand or gravel, but not free from water lodging. *a* Is the border trenched 2 feet 6 inches deep, or to the depth shown by the dotted line *b b*. c c c Are drain-tiles to carry off water passing through the soil. *e* Is a space flagged, slated, or concreted to a distance of a yard from the wall, 3 yards in length, and 15 inches from the surface, to prevent the roots going straight down by the wall into the subsoil. *d*, Espalier.—G. Abbey.

(To be continued.)

NOTES AND GLEANINGS.

The following are from Mr. G. J. Symons and other authorities:—

MINIMUM TEMPERATURES DURING THE FROST OF JANUARY 2ND-5TH.

	Deg.		Deg.
Middlesex—Chiswick....	— 11.0	Somersot—Street	3.5
Bucks—Datchet	— 8.0	Hampshire—Southampton..	4.0
Scotland—Kells	— 8.0	„ Winchoster....	4.0
Middlesex—Staines	— 7.0	Hertfordshire—Berkhmpstd.	4.5
Surrey—Cobham Pyports	— 6.8	Surrey—Wimbledon	5.0
Berks—Wallingford	— 5.0	Berkshire—Long Wittenham	6.0
Stafford—Sugnall Hall ..	— 5.0	Middlesex—Camden Town..	6.7
Mdlesx.—Winchmore Hill	— 4.0	Cambridgeshire—Cambridge	8.0
„ Hammersmith	— 3.0	Middlesex—Notting Hill....	9.0
Surrey—Cobham Lodge..	— 3.0	Rutlandshire—Oakham	9.0
Berks—Maidenhead	— 3.0	Devonshire—Exeter	9.0
Oxford—Dorchester	— 2.0	N. Devon—Stevenstone	10.0
Suffolk—Downham Mrkt.	— 2.0	Dorset—Bridport	11.0
Surrey—Camberwell	— 1 0	Suffolk—Grundisburgh	11.0
Armagh—Armagh	— 1.0	Westmeath—Mullingar	11.0
Kent—Maidstone	0.0	Brecon—Hay	12.0
Hampshire—Laverstoke	1.0	Norfolk—Norwich	14.0
Herefordshire—Leominster .	3 0	Dublin—Monkstown.....	17.0

—— The old tedious process of skeletonising leaves by slow decay in water is superseded by the following, communicated to the Edinburgh Botanical Society:—"A solution of caustic soda is made by dissolving 3 ozs. of washing soda in 2 pints of boiling water, and adding 1½ oz. of quicklime, previously slacked; boil for ten minutes, decant the clear solution, and bring it to the boil. During ebullition add the leaves; boil briskly for some time—say an hour, occasionally adding hot water to supply the place of that lost by evaporation. Take out a leaf and put into a vessel of water, rub it between the fingers under the water. If the epidermis and parenchyma separate easily, the rest of the leaves may be removed from the solution, and treated in the same way; but if not, then the boiling must be continued for some time longer. To bleach the skeletons, mix about a drachm of chloride of lime with a pint of water, adding sufficient acetic acid to liberate the chlorine. Steep the leaves in this till they are whitened (about ten minutes), taking care not to let them stay in too long, otherwise they are apt to become brittle. Put them into clean water, and float them out on pieces of paper. Lastly, remove them from the paper before they are quite dry, and place them in a book or botanical press."

—— Mr. William Kidd, so generally known as a lecturer and writer on birds and other domesticated pets, died on the 7th inst. at Hammersmith, aged sixty-four.

—— An appendix is just published to Pritzel's *Iconum Botanicarum Index*, a most useful work as a guide to all known portraits of plants.

WORK FOR THE WEEK.

KITCHEN GARDEN.

On Friday night the 4th inst., we had 35° of frost in Kensington, with 12 inches of snow on the ground. The Aucubas and other large shrubs have suffered severely. A thaw occurred on Saturday, and now that the snow has vanished we can resume operations in this department. See that the previous directions are carried out; if not, take the first opportunity when the state of the soil will admit. It is bad policy to tread upon trenched ground when soddened with wet, and the delay of a day or two will often be found a gain. *Beans*, to guard against accidents sow in pots or boxes, or on strips of turf, a moderate quantity of Long-pod Beans and Early *Peas* for transplanting. Place them in a vinery at work, or other place where there is a gentle heat, and when about an inch high remove them to a cold frame, secure from frost, to harden. The value of a little seed is nothing compared with the loss of an early crop, and if the weather prove favourable these transplanted crops will come in as soon as, and very often sooner than those sown at the latter end of the year. Embrace every opportunity of stirring the surface about the advancing crops. *Onions*, sow in a warm corner for early spring use, and plant out small ones of last year's growth for the same purpose and to bulb for kitchen use; the soil should be light and rich. *Shallots* and *Garlic*, plant out in light rich soil; draw a small drill, and fill it with charred refuse and lay the bulbs thereon, but do not cover them; they will by-and-by require a slight pressing down. *Sea-kale*, see that the fermenting material about it is not too hot; begin in time, and give it a gentle heat, or the stalks will be as weak as straws. Cover up a succession, taking care to place pots or a substitute over the crown to keep it apart from the fermenting matter, for notwithstanding all that has been said in favour of covering with leaves or ashes, &c., without pots, we feel sure that nothing will entirely do away with the earthy flavour which it thus acquires. Manuring and trenching as fast as the crops are cleared off will still be the principal feature here; turn over compost heaps in the frost, and procure a fresh supply if needed; make up all vacancies in Box-edgings, if the weather is open, and turn up gravel walks, leaving them rough for a time.

FRUIT GARDEN.

If not done in the autumn, prepare and wheel in soil for fruit trees which are to be removed, or for filling up vacancies on the walls; this, however, is far better done in the autumn. See that the drainage is perfect. Stake all newly planted trees, and mnlch them whether on borders or in the open ground. Continue pruning and nailing in favourable weather, and as fast as the trees on the walls are completed manure the border and fork it up. The quantity and quality of this manure must depend on the crops taken from the borders; it is never advisable to plant any very exhausting crops on them, but we are aware that in many gardens it can hardly be avoided, and when this is done fresh soil and manure must be added. We have a great objection to digging in manure on fruit borders where the roots of fruit trees can take hold of it, because we think it causes unfruitful luxuriance, but unless we could dispense altogether with cropping the borders it can hardly be avoided. In nailing, lay hold of the hammer in the right hand, taking a nail between the fore and mid fingers, with the

head inwards towards the thumb, and a shred between the forefinger and thumb; the left hand will then be at liberty to place the branch in its proper position, and all the materials will be ready for performing one operation in the most convenient manner. Cut the dead wood out of Raspberries; prune Currants, and, where birds are not destructive to the buds, Gooseberries also. Scrape moss and lichens off Apple and other fruit trees.

GREENHOUSE AND CONSERVATORY.

Although it is not desirable to shift the general stock of stove or greenhouse plants for a few weeks to come, yet under some circumstances a part may require being fresh-potted at this time. When such is the case, room must be made to keep them apart from the general stock for a short time afterwards, as their treatment will be somewhat different. Most soft-wooded plants require heading-back or pruning at the present season, and this should always be performed a sufficient time before the plant is repotted to enable it to make a fresh growth. It is often necessary, too, with this class of plants to dis-root them in some measure at this potting, and such is an additional inducement to defer it till the plant has made sufficient growth, say young shoots an inch long, to enable it to bear the operation without injury. Stove plants of similar habit will be much benefited by bottom heat and a moist temperature till active growth commences. Thin and tie out the shoots as they advance. Much of the beauty of plants consists in their having clean healthy leaves. Attend to the training of plants on wires and trellises. Fast-growing plants, such as Tropæolums, will require looking to frequently. Cinerarias will now require some assistance in the shape of weak manure water.

STOVE.

Little advance in temperature may be permitted here at present; wait for an increase of light, without which any application of heat and moisture will be vain. Let 60° without sun be the maximum, sinking several degrees at night. Endeavour to create motion in the atmosphere by admitting fresh air in very small quantities at a very low level. Some of the Lælias and Cattleyas will commence rooting, let them have attention and encouragement. Cymbidium sinense is a most useful plant for the drawing-room; it generally flowers about this time, and the scent is most delicious—equal to the most powerful summer Mignonette. A thorough search for snails and vermin should take place previous to potting, and all scale, moss, &c., must be cleansed from the leaves. Dry roots of Gloriosas, and a portion of the stock of Gesneras, Gloxinias, Achimenes, and other herbaceous stove plants may now be plunged in bottom heat to start them previous to potting. As the principal kinds of Begonias will now be showing bloom, they may be advantageously removed to the conservatory, previously staking them carefully to preserve their fine foliage from being damaged.

FORCING-PIT.

The following plants may be now introduced with every prospect of success, the plants being in good order:—Franciscеas, Gardenias, Hedychiums, Gesneras, Phajus, Daphne cneorum, Clerodendrons, Eranthemums, Honeysuckles, Sweet Briars, Cinerarias, Roses, Lilacs, Rhododendrons, Azaleas (both Chinese and the common), Dutch bulbs, Acacias, Kalmias, Polygala chamæbuxus, Pinks, especially the Anne Boleyn, Aloysia citriodora, Heliotropes, &c. It is not meant that these are all equally eligible for forcing, but that all of them may be forced if well prepared for the purpose in the previous summer, by early growth, early rest, and a potful of healthy roots. A day heat of 60° or 65° will suffice at present, sinking at night to 50° or 55°.—W. Keane.

DOINGS OF THE LAST WEEK.

Notes on storing ice will be given shortly; it will, therefore, only be necessary to mention that owing to the rough, wet, though mild weather commencing on the morning of the 6th, most of the other work has consisted in cleaning glass, washing Peaches and Vines, cleaning and moving plants, washing pots, &c., inside the houses and sheds, and giving all the air that could be safely afforded to vegetables and plants in cold pits and frames.

Excluding Frost.—Thanks to the covering and the snow, nothing has suffered from the severe frost, except such as will be at once referred to, and which, as serving to show how little artificial heat will keep out a frost not far from zero, may be more generally useful than giving a detail about different plants, which would be little else than a repetition of the doings of past weeks.

We have a long verandah, 10 feet wide, in front of a wall, with upright glass in front 10 feet in height, and roofed with a rounded canopy of zinc. In this verandah a large number of plants, such as Scarlet Pelargoniums, stood until the late frost. Before it came the plants had to be moved to one end, and the most tender were taken away; but there were some large vases draped with a thick covering of Ivy-leaved Pelargoniums that could not well be removed, and at the approach of frost these were covered over with mats and left where they were, close to the back wall, to take their chance. Though the place was kept close, and the air, therefore, still, the frost through mats and all nearly made wrecks of the trailing white Ivy-leaved Pelargoniums, which we partly expected, as hardly a better radiator of heat could be found than a roof of dark-coloured zinc. Of course, in such a dry still place, any frost could have been kept from plants if they had been deeply enough covered with dry hay or litter, but it was not desirable to do so.

Now for the converse, showing what even a small stove, or some borrowed heat may do in an otherwise unheated place. The verandah, of a similar width, is continued for 40 feet along the end of the mansion; but here it is much loftier and of a more architectural character, and is separated by glass doors, &c., from the part first mentioned. The height of the front, chiefly glass, and without any protection, is about 12 feet, the height from the floor to the centre of a low span-roof of thick ribbed glass being about 15 feet. The roof is concealed from the outside by an ornamental parapet, and thus the snow lay on it, unswept by the winds, during the three days of the severest frost. The back wall was the end of the mansion, and, therefore, was protected from the cold by fires in the rooms on the other side of the wall. A glass doorway at the west end of this 40-feet length, opened into one of these rooms, in which a fire was burning all day, and say until ten o'clock at night. The room not being used in the evening, the glass doorway was opened two or three hours, which would tend then to heat the air in this part of the verandah. With the help of the comfortable back wall, and the assistance of this open door for a time, such plants as Coleus were destroyed, but some large plants of Scarlet Pelargoniums, about which we were chiefly anxious, were not in the least touched, and even some rather large plants of Heliotropes, not very far from the door, showed no signs of suffering. Such pendant succulent plants as Nasturtiums were also uninjured. Some variegated Pelargoniums in vases within a few inches of the glass in front, unprotected by any blinds, did not suffer in the least. Something, no doubt, was owing to the dry back wall, with rooms and fires on the other side, but no chimney in the wall; something, also, to the air being dry, and the soil about the roots of the plants being rather dry; but the safety is chiefly to be attributed to the door being open between this part of the verandah and the living-room for a few hours. This door, be it noted, is at one end of this part of the verandah, and, therefore, nearly 40 feet from the other end, which, we may remark, is chiefly glass, and yet as respects the safety of such plants as Scarlet Pelargoniums, there is scarcely, if at all, a shade of difference between one end and the other. This may give a hint to those who are greatly perplexing themselves as to how best to ventilate and change the air in their plant-houses. The above simple facts prove that the opening of a door between the end of a room and the end of a verandah is capable of securing a double circulation of heated and of cold air from the farther end of one to the farther end of the other respectively, and that this would continue so long as the fire burned, or the one place was much warmer than the other.

If we were asked if we should be satisfied with such a borrowed mode of heating a plant-place, we would say, Decidedly not, as there might not always be the same favourable circumstances in such a severe frost, and it might not be suitable to be always fixing on the hardiest plants, and, besides, it is always best for one part of an establishment to be independent of the favours or the caprice of another, even as respects borrowing heat from a room; and, therefore, when flowering plants are to be kept in a place all the year round, we prefer that it should be independently heated; but still the simple facts show that thousands who would have their little glass house attached to their sitting-room but for the dread of flues, and boilers, and water-pipes, may accomplish their object by means of a small stove, or more simply still, by denying themselves the warmth of their sitting-room, by opening the communication between it and their pet plant-house during a few of the coldest hours. —R. F.

COVENT GARDEN MARKET.—January 12.

Supplies moderate, and French goods confined to Lettuces, Endive, and *Barbe de Capucin*, with the exception of a few bundles of forced Asparagus, which is at too high a price to obtain anything but a very limited sale. Pears now are almost over, and good dessert Apples are in request. There have been heavy arrivals of Potatoes, both coastwise and by rail, at former quotations.

FRUIT.

	s.	d.	s.	d		s.	d.	s.	d
Apples ..... ½ sieve	2	0	to 3	0	Melons..... each	2	0	to 4	0
Apricots ..... doz.	0	0	0	0	Nectarines ..... doz.	0	0	0	0
Cherries ..... lb.	0	0	0	0	Oranges 100	5	0	10	0
Chestnuts..... bnsh.	10	0	18	0	Peaches.....doz.	0	0	0	0
Currants..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	3	0	6	0
Black ..... do.	0	0	0	0	kitchen..... doz.	2	0	4	0
Figs ..... doz.	0	0	0	0	Pine Apples ..... lb.	3	0	6	0
Filberts.....lb.	0	0	0	0	Plums ..... ½ sieve	0	0	0	0
Cobs..... lb.	0	9	1	0	Quinces ..... doz.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Raspberries.....lb.	0	0	0	0
Grapes, Hothouse..lb.	4	0	8	0	Strawberries ..... lb.	0	0	0	0
Lemons..... 100	5	0	10	0	Walnuts..... bnsh.	10	0	20	0

VEGETABLES.

	s.	d.	s.	d		s.	d.	s.	d
Artichokes ..... each	0	0	to 0	0	Leeks ..... bunch	0	6	to 0	0
Asparagus .... bundle	6	0	10	0	Lettuce.....per score	2	0	3	0
Beans, Broad.. bushel	0	0	0	0	Mushrooms .... pottle	1	0	2	0
ScarletRun.½ sieve	0	0	0	0	Mustd.& Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions.... per bushel	4	0	5	0
Broccoli ..... bundle	1	0	1	6	Parsley..doz. bnnches	12	0	0	0
Brus. Sprouts ½ sieve	2	0	3	0	Parsnips ..... doz.	0	9	1	3
Cabbage ..... doz.	2	0	3	0	Peas..... per quart	0	0	0	0
Capsicums..... 100	0	0	0	0	Potatoes ..... bushel	2	6	4	6
Carrots..... bunch	0	6	0	8	Kidney ..... do.	3	0	4	0
Cauliflower ..... doz.	2	0	6	0	Radishes doz. bunches	1	0	1	6
Celery..... bundle	2	0	3	0	Rhubarb ..... bundle	0	9	1	6
Cucumbers..... each	1	0	2	0	Savoys ..... doz.	3	0	4	0
pickling .... doz.	0	0	0	0	Sea-kale ..... basket	2	0	3	0
Endive ..... dez.	2	0	0	0	Shallots ..... lb.	0	8	0	0
Fennel ..... bunch	0	3	0	0	Spinach ..... bnshel	5	0	6	0
Garlic ..... lb.	0	8	1	0	Tomatoes.... per doz.	0	0	0	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	6	0	0
Horseradish .. bundle	4	0	6	0	Vegetable Marrows dz.	0	0	0	0

TRADE CATALOGUES RECEIVED.

London Seed Company, 68, Welbeck Street, Cavendish Sqnare, London, W.C.—*General Price Current of Kitchen Garden, Flower, and Farm Seeds.*

Hamilton & Wright, Surrey Seed Warehouse, Thornton Heath, London, S.—*Catalogue of Select Vegetable and Flower Seeds.*

Robert Parker, Exotic Nursery, Tooting, Surrey.—*Catalogue of Flower and Vegetable Seeds, Fruit Trees, Alpine and Herbaceous Plants, &c.*

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Seeds for the Kitchen Garden, Flower Garden, and Farm.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

Tydæa and Achimenes (*C. D.*).—All the species of each genus are so closely allied and so very much alike, that they are separated on account of differences which only a botanist would detect. The most noticeable differences are—Achimenes has a two-lobed stigma; the ovary bordered by a ring-formed glandular disk. Tydæa has a stigma two-cleft, and the ring-formed disk composed of five distinct glands.

Vine Cuttings (*G. Scutt*).—We have no cuttings at our disposal. You must write to the Secretary, Royal Horticultural Society, South Kensington.

Failure in Heating (*S. St.*).—Provided you obtain heat enough in the tank over the furnace, your failure is owing to having over your tank a bottom of wood and moss, and then a thickness of 10 inches of cocoa-nut fibre to plunge in, all three being the worst conductors you could have. For top and bottom this is what we would advise:—Let the spars of wood over the 3 inches of water remain, cover them over with a piece of zinc for a bottom, or thin slate; make this waterproof. Put a thin box inside the present one, as deep as your plunging material, but so as to leave a space free back and front of 1½ inch, to let the dry heat into the air of the propagating place. Pour a little water down when you want vapour; or better still, make a hole back and front, through the bottom, furnished with a plug, so that you can let vapour up from the hot water when desirable. Place 2 or 3 inches of rough cinders over the bottom above your tank, and if you use cocoa-nut fibre to plunge in, let the bottom of the pot rest on the cinders, not on the cocoa-nut fibre. By such a mode you can have top heat and bottom heat at will. It is next to impossible to cause heat to pass through cocoa-nut fibre when dry.

Arrangement of Plan (*G. P.*).—Write to Mr. J. Gibson, jun., Surrey Lane, Battersea, London, S.W., tell him what you require, and ask for what information you need.

Constructing an Ice-stack (*S. P.*).—The following is the plan adopted by the late Mr. Beaton. "It must be made sugar-loaf fashion, with the broad end at the bottom, of course. When the site is on level ground, the carts must be emptied so near to the cone that the ice when broken can be conveniently thrown on with shovels, and then two or even three places round the cone may be used for breaking the ice; but the easiest way is, when the ground or site is on the face of a bank, or at the bottom of a gravel or chalk pit, as in that way the carts may be emptied on the top of the bank, the ice broken there, and then thrown down the bank, so as to empty itself on the cone at once. At Shrubland a natural hollow was chosen for the site of the iceberg, and the bank on one side made steep; and at 6 feet from the bottom of the bank was the outside of the cone when it was finished. Some such space is necessary between the bank and the ice, to get rid of rain or snow-water running down the bank before it gets to the ice. At the bottom of the bank, and half way up, posts were let into the ground in pairs, 4 feet apart, and braced together with a strong piece of timber set across, as builders do their scaffolding; then the garden planks for wheeling on were made into a long trough, inclining from the top of the bank, and resting on these cross pieces; the bottom of the trough being carried out to near the centre of the cone, and far above it; the ice was broken on a platform of boards at the top of the bank, and thrown into the inclined trough, and it slid down just over the cone. A set of men were put on the cone to distribute the broken ice as it fell from the spout, and one of whom was the master builder: he saw the cone brought up regularly; and when the ice reached the height of the bottom of the spout, the planks were re-arranged so as to allow room for throwing off the ice as fast as it came down; and, finally, when the cone was finished into a sharp point, the whole was left till the first frost after mild or thawing weather; and the reason is this—As soon as it turns to rain or thaw, the ontside of the iceberg begins to melt a little, and sometimes it remains so for three weeks, but on the first hard frosty night the whole is frozen over again, and the outside of the cone is then as if it were one solid face of rugged ice; then is the time to thatch it with good long straw, and about the same thickness as you would a wheat or barley stack, and no more, provided you have cheaper materials to give it a good thick covering afterwards. At Shrubland they used large quantities of leaves, and nothing else, over the straw; throwing it on at intervals, so that the leaves did not heat by putting too many on at once. The depth of covering over the straw was sometimes twice as much as in other seasons, according to the quantity of leaves on hand, but 2 feet in thickness does not preserve the ice better than 1 foot. The ice was never uncovered by high winds blowing off the leaves, and never was anything put on or against them to keep them down. Perfect exemption from wet or damp is necessary for the bottom of an ice-heap; and a few pieces of rough wood, put on such a place, and covered with brushwood about 1 foot, and that again covered with 6 inches of straw, is the way. The brushwood and straw are soon compressed into a few inches in thickness by the weight of the ice; and as the ice melts, the water passes through, without hindrance, into cross open drains previously made at bottom."

Acacia Farnesiana.—"In 'Rimmel's Book of Perfumes' I have met with the following passage:—'Cassie (Acacia Farnesiana), is a shrub of the Acacia tribe, which only grows in southern latitudes. Its height ranges from 5 to 6 feet, and it becomes covered in the months of October and November with globular flowers of a bright golden hue, which peering through its delicate emerald foliage have the prettiest effect. All those who have travelled in that season on the coast of Genoa will no doubt remember what charming bouquets and garlands are made of the Cassie, intermixed with other flowers. To perfumes it is a most valuable assistant, possessing in the highest degree a fresh floral fragrance, which renders it highly useful in compounds. It bears some resemblance to the Violet, and being much stronger is often used to fortify that scent, which is naturally weak. The Cassie requires a very dry soil, well exposed to the sun's rays. The tree does not bear flowers until it is five or six years old. The yield varies from 1 lb. to 20 lbs. for every tree, according to age and position. The blossoms are gathered three times a-week, after sunrise; a very strong oil and pomade are obtained from them by maceration. In Africa, and principally in Tunis, an essential oil of Cassie is made, which is sold at about £4 per ounce, but French and Italian flowers are not sufficiently powerful to yield an essence.' Perhaps you or some of your correspondents may know the Acacia Farnesiana, and be able to testify as to the above description, which, if correct, sufficiently proves that this tree ought to be in more general cultivation, as in the months of October and November an elegant tree with bright golden flowers possessing the odour of Violets could not have many rivals.—E. T., *Packwood.* [Acacia Farnesiana is so called from being first introduced into Europe in the Farnese Gardens, which happened as long since as 1616. It is a native of St. Domingo, but is grown abundantly in Spain, Italy, and North Africa. It requires a warm greenhouse in this country.]

House Sewage (*D.*).—If the pipe conveying the sewage to the reservoir adjuts into a sieve, very little matter that cannot be pumped up will pass into the reservoir. What does subside to the bottom must be cleared out periodically. In our own experience such a reserveir did not need clearing out oftener than once a-year. By far the most valuable part of the sewage is that in the liquid form. We do not know Mr. Malins's experiments.

Accented Catalogue (*A. F. E.*). — Messrs. Carter & Co. have an accented catalogue, but that only includes annual, biennial, and perennial flowers raised from seed by gardeners.

Pruning Roses (*Alpha*).—Your trees being so recently planted we would not prune until the first mild weather after the middle of February, and then cut-in the shoots to within two or at most three eyes or buds of their base, cutting quite closely any weak shoots. The dwarfs you may treat in the same manner, leaving five buds below the cut on the very strong, three on the moderately strong, and one or two eyes on the weak shoots, cutting the very weak shoots away quite close to the stem. If any sheets are disposed to cross or crowd their neighbours cut them away, paying particular attention to the formation of a well-balanced open head.

Tacsonia ignea not Flowering (*Idem*).—The Tacsonia ignea and T. Devoniensis ought to have flowered in your greenhouse with bottom

heat, and we can only account for their not having done so from your keeping them in constant growth without affording a season of dryness or rest; or they may not have been trained sufficiently near the glass to afford the shoots a sufficiency of light and air, of which they can hardly have too much. Your Pomegranate out of doors will only succeed on a south aspect, and in a warm soil and sheltered situation. Both it and Tacsonia Devoniensis are tender.

Labels for Fruit Trees (*A. B.*).—The most enduring labels are those formed of lead with the names of the kinds of fruit tree impressed or indented with an iron stamp about halfway through the lead, which may be that known as 7 lbs. to the superficial foot. The labels should be 3 inches long, 1¼ wide, and have a hole through a shoulder left in the middle or one side of the label. The label should be fastened to the tree with stout flexible lead wire, allowing room for the tree to grow. You will require punch letters of the alphabet, and the figures correspondiog to that of the year in which the trees were planted, if you care to date their planting. Labels of this kind only perish with the lead. These are the most durable labels we know. Zinc labels are also good and last a long time, if the names of the trees be written on them with proper ink, which may be made of 1 drachm each of verdigris and sal ammoniac powder, ½ drachm lamp black, mixed with 10 drachms of water. The labels should be made bright by rubbing them with sand paper, then write the names upon them immediately in a clear bold hand with a quill pen.

Dipladenia and Allamanda Starting into Growth (*M. F.*).—You will now prune them, thinning out the weak and shortening the strong growths, and when the shoots have grown an inch or two pot the plants carefully, and encourage their growth by affording plenty of heat and moisture, but avoid making the soil very wet; in fact, be careful in respect to water until the plants recover the potting. Water sparingly until they are growing freely.

Pimelea decussata Treatment (*Idem*).—The plant now covered with young growth in your stove looking to the north, and being rather dark, should without further delay be removed into a light and airy situation in a greenhouse. The shoots you sent do not exhibit flower-buds, but it is too early to distinguish them. They may form flower-buds, and, if so, will most likely flower during May or June.

Newly Planted Peach Trees (*Nemo*).—Your wall being only 6 feet in height, it is certain you cannot want growth to any great extent. We would not, therefore, cut back the trees, but, having a sufficiency of shoots to cover the wall at 9 inches apart, train them at their full length, and in spring pinch the side shoots or take out their points at the third leaf, excepting any that may be required to train in to cover the wall, as already stated, with branches 9 inches apart All laterals after the first pinching should be stopped at the first leaf. If you propose to treat them on the long-pruning system, it may be necessary to head back the trees so as to furnish the requisite number of strong long shoots, and in that case the strong shoots may be cut back one-third and the moderately strong two-thirds their length, and you must make up your mind to wait two or three years for fruit; but by the first plan you will with proper care be sure of a crop the year after planting.

Camellia Buds Falling (*E. T.*).—We should think the buds fall from the want of proper support, and attribute it to the roots not being healthy, or at least inactive. The leaves are probably scorched through allowing the sun to shine powerfully upon them whilst wet and immature. It is not necessary to pot every year, once in three years is sufficient if the drainage is good. When making new growths they require an abundant supply of water, with heat, plenty of atmospheric moisture, and slight shade from bright sun. The soil should at all times be kept moist, no water being given until there are signs of dryness.

Amaryllis Adonis (*An Amateur*).—This will succeed "if started in a good bottom heat from the beginning of March to May." Gradually withdraw the plant from heat, moving it to a light warm greenhouse; there place it in the full sun, water plentifully for at least six weeks longer, and afterwards diminish the supply.

Ixias, Sparaxis, and Tulips under Hand-lights (*Idem*).—The pots of these, now that growth has commenced, may be removed to a light, airy, cool greenhouse, or to a cool part of a warm one, affording plenty of air; or you may leave them where they are, and protect with mats in severe weather, giving air when the temperature is mild.

Heating Hotbed (*Idem*).—By having a door made to fit closely at A, as shown in your sketch, you may prevent the heat escaping. You may keep up the heat by renewing the dung at each end alternately and frequently with hot well fermented material, and by keeping the space beneath full of the same.

Grafting Camellias (*Idem*).—Obtain stocks of the single red, and in spring, just before the plants begin to push afresh, whip-graft them just above the soil. After the graft has been made plunge the pots in a mild hotbed of from 70° to 75°, and cover with a bell-glass, hand-glass, or close-fitting frame, in addition to the outer glass covering of the house, keeping close until the grafts commence growth, then admit air by degrees. Full directions for grafting are given in "Fruit Gardening for the Many," which you can have free by post from our office, if you enclose five postage stamps with your direction.

Vinery (*One in Perplexity*).—In the house 50 feet long by 12 wide, in which you have three Peach trees and a Vine against the back wall, there is nothing to prevent your having these trees in a cool house, and a Vine up the rafters at every 4 feet, but you must restrict these Vines to close spur-pruning, and not allow the bearing laterals to extend too far from the stem, for just in proportion to your shading the roof with Vines will you darken and injure the trees on the back wall. If you divide the house into two, and have a stove in one end, that end will come in before the other, and thus give you a succession, a matter of importance as respects the Peaches. The inside border will do for the Vines, but you must top-dress it well every year. If you left two or three of the rafters vacant it would be all the better for the back wall. If you value the Vines most, then plant against each rafter. For such a house, Black Hamburgh, Esperione, Royal Muscadine, and Buckland Sweetwater, will answer well.

Extent of Piping a Boiler will Heat (*Excelsior*).—We should judge such a boiler, surrounding a furnace 18 inches by 24, would heat from 250 to 300 feet of four-inch piping, but much would depend on the working. We do not exactly perceive the importance of the sixteen tubes, 6 inches by 1½ at the top, through which the fire passes to the flue. Are these tubes for air and smoke, or are they for water, and the smoke to get to the flue between them? The feeding-door being beneath these pipes leaves us in doubt. The boiler complete, without brickwork, is an advantage, but unless the boiler be inside, with merely the feeding-doors outside the house, much heat will be lost, especially if the boiler is not protected at the sides by a non-radiating, non-conducting material, as has several times been recommended for such boilers. To obtain the most heat and no dust, the boiler should be inside the house, and the feeding-door, ashpit, &c., outside.

Planting Strawberries (*C. W.*).—The ground you intend to plant with Strawberries should at once be trenched to a depth of 2 feet, or as deep as the soil allows. Too much of the subsoil, if it is sand, gravel, or clay, must not be brought to the surface, though a few inches may do no harm. If there be turf on the ground place it at the bottom, and unless the soil is light no further manuring will be required, but if it is light and poor apply a good dressing of cowdung, and place it a foot or 18 inches from the surface. It would be well if the soil is heavy to throw it up in ridges, and being exposed to frost and air it will be the easier worked, and more suitable for the plants. Choose a time when the ground is in good working order during March to plant the runners of last year, moving them with a ball of earth to each. Spring is the best time to plant Strawberries.

Soil for Camellias and Azaleas (*Senex*).—Camellias do best in a compost of turfy loam formed by cutting turf from a pasture where the soil is neither very light nor very heavy, but a good medium-textured, hazel or yellow loam. Cut it 3 inches thick, and place it in an open situation, grass-side downwards, with a layer of cowdung an inch thick between each layer of turves. At the end of six months turn the heap over, and again three months afterwards, and at the end of twelve months the soil will be fit to take under cover, and being chopped up with a spade it constitutes the best compost we know for Camellias. Failing this, two-thirds loam, if turfy all the better, and one-third peat, with a free admixture of sand, will grow them well, but not equal to the former compost. If the loam is poor and not turfy, you may add one-fourth of your well-rotted dung; the little old mortar there is in it will do no harm. The Azaleas should have a compost of two-thirds sandy, turfy peat, and one-third turfy loam, adding one-sixth of silver sand. Azaleas do not require manure. Both Camellias and Azaleas require the pots well drained.

Nitrate of Soda (*Bexley*).—One dressing of nitrate of soda for a lawn is sufficient for one season.

Caterpillars on Quickset Hedge (*Idem*).—Syringe the hedges in the evening with a solution of 2 lbs. of soft soap, and one peck of lime in thirty gallons of water, straining the solution so that dirt may not clog the syringe; or after a shower strew newly slacked lime over the hedges.

Peach Trees Infested with Scale (*Anxious*).—We sympathise with you, but cannot believe that the use of the composition named at page 78 of No. 226, Vol. IX., would cause the mischief you complain of, for we have employed it many times before and since that time for dressing Peach and other fruit trees without the loss of a single fruit-bud, or injury to a branch or shoot. We fear the brush has been used with no light hand, and been rubbed up and down as in painting woodwork, which would, to a certainty, disturb the buds. The brush should have been used gently, taking proper care not to disturb the buds. The wood, you say, is dried up. None of the ingredients of the composition will destroy the wood of any deciduous smooth-barked trees, and how it could penetrate through the scales of the buds we do not know, unless they had begun to swell before the application of the composition. Either the latter was applied at a higher temperature than 140°, or the trees were so much infested with scale (which you state rendered them unsightly in growth), that the shoots were exhausted. Irrespective of any harm from the application of the composition, we do not think you have any hopes of a crop of fruit this year. You must now wait and see the result of the swelling of the buds, and the commencement of new growth; and should the buds fall, as we apprehend they will do to a great extent under any circumstances, cut away the shoots that should have borne to within half an inch of the lowest new shoot, and train that in the place of the shoot cut away. An attack of scale, such as your trees appear to have suffered from, was more than sufficient to have caused the evils of which you complain.

Heating by Hot Water (*Jardinier*).—We do not understand your case thoroughly, because you do not state where your steam-pipe was placed, where your supply-box is situated, or whether it communicates with the top or the bottom of the boiler; and, again, the exact position of this supply-box is also a mystery, since it is described as being 2 feet above the boiler, and, again, 3 feet above the highest point of the pipes. Now, first, with the supply-box so much higher than the highest point of the pipes, in order to prevent this boiling over, we would change the tap into an open gas-pipe, going out of the house, and at a height of several feet above the supply-box. Then, if this did not answer, you would have either to make your supply-box larger, or add another one at the same height, to communicate by a lengthened tap-pipe with the highest point in the pipes of the house. Your trouble of boiling over arises from the power of the boiler to heat five times the quantity of piping, the size of your supply-box being insufficient for the rapid exhaustion of greatly heating the water. Your house would have been better heated with more piping. By taking the air-pipe from the tap, as proposed, out of the house, and, say fully 6 feet above the water-pipe, reversing its end ⌐, putting on merely enough of fire to heat the same 80 feet of piping, and banking up and using the damper, then we think the boiler may be used without boiling over.

Sugar-baker's Skimming (*M. T. Smith*).—It has been frequently applied to Vines and other fruit trees which required manuring. Its fertilising qualities are chiefly owing to the ox blood used for clarifying the syrup. We never heard of its employment as a liquid manure, and do not think it would dissolve.

Names of Fruits (*Umpire*).—*Apples:* 1, Court of Wick; 3, Sykehouse Russet; 4, Biggs' Nonsuch; 5, Autumn Pearmain. *Pears:* 2, Beurré Dercuineau; 3, Swan's Egg; 4, Zephirin Grégoire. (*W. H. S.*).—Your Pear is St. Lezin.

Names of Plants (*J. C. M.*).—A Maxillaria most likely; but too far gone when received for identification. (*E. M. Buck*).—1, Cheilanthes myriophylla; 2, Pellæa hastata (?); 3, Selaginella hortensia; 4, Blechnum sp. (?); 5, Onychium japonicum; 6, Asplenium dimorphum. (*C. T. F.*).—We will give the name and particulars of your Solanum next week.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending January 12th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 6	29.378	29.336	49	30	40	40	S.E.	.00	Hazy, with slight rain; fine and rather mild.
Mon... 7	29.230	29.026	53	44	35	40	S.W.	.46	Overcast; hazy; rain; fine at night.
Tues. . 8	29.760	29.760	52	36	40	42	S.W.	.01	Rain; snow rapidly disappearing; very boisterous.
Wed. . 9	29.813	29.046	48	36	39	41	S.	.29	Boisterous; very boisterous with rain; showery; fine.
Thurs. 10	29.426	29.070	43	26	39	42	W.	.00	Very densely clouded; overcast; slight frost.
Fri. .. 11	29.689	29.584	38	16	39	39	N.E.	.00	Fine throughout; sharp frost at night.
Sat. .. 12	29.660	29.518	34	14	39	40	S.	.00	Dry and frosty; towards noon snowing thickly in broad flakes; [frosty.
Mean	29.565	29.334	45.28	28.86	38.71	40.57	..	0.76	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

MUTILATING A COMPETITOR'S FOWLS.

From circumstances that have recently come within my personal cognisance, coupled with the perusal of the letter of Mr. Charles Sidgwick, of Ryddlesden Hall, Keighley, inserted in last week's Journal, I much fear the dastardly practice of plucking out the sickle feathers of exhibition fowls, unless prompt measures are adopted for its prevention, is about to be recommenced. About two years ago it was a continually recurring nuisance, and was then perpetrated generally at exhibitions after the awards were returned, and in several instances even before the prize cards were affixed to the pens. I have repeatedly awarded prizes to full-tailed cocks, and been astounded afterwards, within a very brief space of time, to find the tails more or less spoiled by wilfully plucking two or more of the principal feathers. It must be borne in mind, that not only does this unmanly practice prevent the possibility of exhibition for several weeks, but, what is far more discouraging to owners, the chances are seriously against the new feathers proving true to colour when reproduced after this violent and unnatural extraction of the original plumage. In every case I can call to mind the abstracted feathers were found lying either behind some of the adjacent pens, or thrown away at some distauce on the show-field. As they were never carried away it was evident they were not taken for profit, but from a spirit of mischief or some far more decidedly worse motive. From the simple fact that a party, of course nameless, never met with this accident (?) when the poultry under his care were successful, but repeatedly such mutilations of first-prize birds took place when his competing pens were defeated, a stroug suspicion was aroused, and a very vigilant surveillance ensued. Detection did not follow, but an officer in plain clothes, who had been on the watch, stated much to confirm suspicions; the only good was, that from that time until quite recently no repetition whatever of this cowardly act took place. Now, as I am informed that the law can be strictly enforced against any one convicted of committing such wilful damage, I suggest to all parties interested to be on the alert, and if possible place the offender, whoever he may prove to be, within the gripe of the law. I do not suggest to others what I should hesitate to do myself, for I purpose following out to the letter the advice laid down, and should this prove effective, so much the better; but if a general effort only prevents the recurrence of this abominable mutilation of valuable property, surely my present letter may not be written in vain. I do heartily wish you would give the poultry-loving world your opinions on the subject.—Edward Hewitt, *Eden Cottage, Sparkbrook, Birmingham.*

[This letter needs no support—the offence it denounces must be abhorrent to every honourable mind. We hope that the Committees of Poultry Shows will be on the alert to detect such criminals. Men placed to watch the pens might prevent the perpetration of the offence, or might detect the perpetrator. If detected, let him be unflinchingly prosecuted, and we promise to publish his name with such particulars as will hold him up to scorn and execration. One name from the north has been forwarded to us, but the evidence is not sufficient to justify its publication.—Eds.]

A GOOD INTENTION.

I am a working man with but little cash above the wants of my family, but I have a large garden, and I can make some pens at a small cost to contain a few fowls, the produce of which, I think, as food for my family, will repay the cost of their keep, and I shall have the pleasure of a few pets to look after. I therefore intend laying down a small portion of my garden in grass for a run for the chickens; but when I have done all this my difficulties begin, for I am not a judge of the feathered tribe, and, therefore, I cannot select my stock; at the same time my circumstances will not allow me to buy my stock from the head breeders as I would otherwise do. I write, therefore, to ask you to name some one from whom I can obtain fowls at a reasonable rate, yet at the same time useful stock.

As to the sorts, I think the evidence is in favour of Dark Brahmas: therefore I will say (subject to your approval), a few of these, a few of Black Spanish, which I think are a noble fowl, and their eggs certainly look noble on the breakfast-table, and a few Buff Cochins to run in a backyard, which I am afraid is too confined for any other fowls.

I must apologise for the trouble I am giving; but, let me add, it is not only on my own account, but for several of my fellow workmen who wish to keep a few fowls. They, like myself, wish to obtain something better than the old Barndoor fowl, believing, as I do, the best kinds are the best to keep.—Inquirer.

[We insert this letter because we think that some of our readers who have surplus stocks of the varieties named by "Inquirer" may be willing to let him and his fellow workmen have them at the market-rate for table-fowls. We mean birds that for some defect would not be saleable to poultry fanciers. Should not any such offer reach us, then we recommend "Inquirer" and his fellow workmen to depute one of their number to attend a sale at Mr. Stevens's Auction Rooms, King Street, Covent Garden. When such a sale of poultry is advertised in our columns, if "Inquirer" writes to Mr. Stevens he would send a catalogue, and then "Inquirer" would see whether the poultry to be sold were such as he and the others need.—Eds.]

THE LATE TREASURER OF THE POULTRY CLUB.

Referring to Mr. Tudman's communication, which appears in your impression of last week, I must remind Mr. Tudman, once for all, that he had due notice that he would be called on for an explanation of his conduct by resolution at Birmingham before the general meeting of the Poultry Club; that he shrunk from and evaded that explanation by resigning his office as Treasurer, and retiring before the resolution could be brought on, being probably perfectly aware that I had personal and documentary evidence on the spot to substantiate any assertions I might make, many of the latter being in Mr. Tudman's own handwriting. These are still at my command, and I adhere to and re-assert all the statements I made in your Journal of the 1st inst.; and as Mr. Tudman did not choose to avail himself of the legitimate means offered him of clearing himself, I certainly, no matter what his assertions may be, shall decline to continue this correspondence, being quite content to leave the members of the Club and the public at large to draw their own inferences.—F. W. Zurhorst, *Hon. Sec. Poultry Club.*

LEEDS POULTRY SHOW.

I find in your last Number, page 34, two complaints respecting my opinions about the Leeds Poultry Show, one from a correspondent signing "Black Bantam," and the other "J. W."

Certainly Black Bantams should have black legs and not puckered earlobes, such as "Black Bantam" has seen disqualified at many previous exhibitions. Well, so far so good; but I suppose we do not end with an idea, that because one pen is better in the colour of the legs, and to "Black Bantam's" fancy better in the earlobes, that he ought to have won. I trust, however, that "Black Bantam" will grant me as much forbearance as he seems to have towards the Judges, and that I may be exonerated from blame, as on the Leeds Show day I expressed my opinion against him, and although we did not then agree, we parted good friends, and as such I trust we shall continue. Still, I must tell "Black Bantam" honestly, that in my estimation his birds were beaten at Leeds by the pen he condemns as having flesh-coloured legs and puckered earlobes, and if he will look at his own pens I will read him their faults from memory, and for which I vouch.

The cock which "Black Bantam" had in his pen has the most disagreeable comb I ever saw in a pen to win a Birmingham prize; it is large, tall, clumsy, and at the top, where it ought to be serrated, it is neither like a comb nor approaching one, and I heard a friend of "Black Bantam's" say it was like a piece of pudding batter. The hens were small and good, "if,"—if what? why, they had been healthy; but they were in such a bad state, that I trust "Black Bantam" will require me to say no more on this subject. Perhaps he will ask, Where was he beaten after all? Well, in the comb of the cock, the plumage of the pen, and the health of the birds. These, in my estimation, were the points which carried the honours to the pen which contained a cock with lightish-coloured legs, but in every other point a pen difficult to excel; and had "Black Bantam" judged without prejudice, he would, in my estimation, not have dwelt so long on the puckered earlobes, as he calls them, as there was very little difference in that respect betwixt the first-prize pen and his own. Having stated my opinion so candidly in this case, I must only add that I have not the slightest desire to offend one for whom I have a strong feeling of friendship.

Next for "J. W." If he will read my remarks on the Hamburgh cup pen he will see that though I differed from the knowing ones, yet at the time I honestly quoted their opinions. —J. D. Newsome.

DOTTINGS AT THE BRISTOL AND CLIFTON POULTRY SHOW.

For some weeks past the west of England has been invaded by huge placards advertising this Show. These placards have not been headed by ungainly Cochins, as is generally the case—and by the word "ungainly" I do not refer to the breed, but to the representations—but by very respectable portraits of white-faced Spanish fowls. This, at least, is appropriate, for is there any part of England or the world that can cope with dirty Bristol in this aristocratic breed? Sorely, if Dorking was right in holding a show for Dorkings only, Bristol might thus have acted in reference to Spanish; but wiser counsels ruled. Still, it is an interesting poultry speculation to discover why Bristol and Spanish are inseparable; why the best exhibitors and the greatest prizetakers should have congregated at Bristol—in early "mania" days Rake and Plummer, the latter sweeping first, second, and third prizes for chickens at the first Worcester Show, and then, as if satisfied, retiring from the fancy; these quickly followed by Rodhard, and now Lane, Jones, Parsley, Rone, and others, till, in a poultry sense, Bristol may be called the capital of the Spanish country. Time was when a darkened house was thought to improve the white face. Well; at Bristol it is nearly always dark! So far, if this theory is still held, Bristol atmosphere is in favour of first-rate Spanish. Be this as it may, whatever the local advantages may be, Bristol people, who, in my boyhood's days were said "to sleep with one eye open," know how to take advantage of them.

Whatever may be the faith of other parts of the country in the great Game critic of our Journal, Bristol has no faith in "Newmarket," and evidently believes in the beauty of the Spaniard rather than of the Game; and so long as they can show us such Spanish as appeared at the Bristol Show, so long may they retain their preference.

Doubtless, it has often been a mystery to poultry-breeders, and especially to us southrons, why, with many local prizetakers in Bristol and its environs, with a teeming population in addition, Bristol should be without a poultry exhibition. "A burnt child dreads the fire," proverbs tell us; perhaps this explains it. Many years ago Bristol held an exhibition. I think it was the first place where Mr. Rake exhibited his strain, which he had kept many years without knowing their real value; he was at the head of the chicken class. This show was, I believe, the starting-point of his triumphs. Alas! like many other attempts, I fear, this show was not a success. Nothing daunted, two or three years later Bristol essayed again, this time at the Zoological Gardens, but again, I fear, in a pecuniary point of view it was a failure. I recollect well going once to see that show, and feeling convinced that the influx of visitors could not possibly pay—there was no difficulty in seeing any pen you pleased, the fact being, as I believe, that the Gardens were too far away from the town. For many years, then, matters have remained dormant, and Bristol men have been content to reap their triumphs abroad instead of at home. The autumn of 1866, however, brought whispers of a poultry exhibition; but the first-born, and let us hope not the only child, was to be no puny bantling, but one that should at starting boldly challenge any of its older rivals for liberality of prize list and accompanying excellence of specimens. The appearance of the prize list satisfied the first; some one or two minor points might be wisely amended, but the prize list was eminently liberal. As regards the second point, any connoisseur who visited the Exhibition would allow that the eight hundred pens formed a splendid collection of domestic poultry. It may, I think, be safely affirmed that never in the western counties has so valuable a collection of birds been brought together.

Let us, however, take the prize list. *Spanish*, of course, were first-class. Never, perhaps, has a better collection been seen; but every prize, whether in the adult, chicken, or single cock class, was taken by Bristolians. Bravo, Bristol! In the chicken class were twelve highly commended pens! The show of these birds was magnificent. The second-prize single cock was a most splendid bird; but, unfortunately, had one side of the face disfigured, or he must have taken the cup. Mr. Parsley's cup chickens were also most excellent; and the other prize pens, with Mr. E. Jones's very highly commended pen, were only behind because they could not all be first.

Dorkings formed a large entry; but as far as one can gather, not a first-rate collection. In the chickens not a single commendation was awarded amongst thirty pens! The old birds contained the pen that the Judges considered the gem of the Exhibition, to which Mr. Lang's ten-guinea cup was awarded. I am no Dorking breeder, and possibly know nothing of Dorkings; but I liked Lady Holmesdale's second-prize pen better than this her cup pen. I examined it closely. The local papers said it was owing to the particularly "clean condition of the legs" that it obtained its position. The legs were clean certainly, the scales looked soft, but the cock was deficient, as it appeared to me, in the proper Dorking fifth claw. This I had always imagined should be distinct, standing out from the other toes, and generally from 2 to 3 inches long. If this be correct, then the bird failed here, for the claw was certainly not 2 inches long, and this claw seemed rather to have an inclination for the fourth, and somewhat to follow its course. The comb of the cock was large, and certainly twisted. Lastly, one of the hens had a much smaller comb than the other, and, instead of falling over, it twisted, but remained erect—at least, so it appeared to me and to many, who examined the pen closely. They were certainly very heavy birds. The third-prize birds were large, but the cock was duck-footed, and one of the hens inclined to the same defect.

The *Cochins* were a grand array of birds, especially the Brown birds, some of these being magnificent specimens. Mr. Fenton's cup hens appeared too fat to me, and they were dull and heavy in the pen. With my *penchant* for a moderate vulture hock, my delight was great at seeing many birds in these classes prizetakers, with unmistakeable vulture hocks. Mr. J. Cattell's third-prize Buffs were even a shade beyond what I like—at least, the cock was. The cup chicken birds had also well-covered hocks, which added greatly to their beauty; so had several of the highly-commended pens in all the varieties.

I cannot sufficiently express my satisfaction at seeing these adjudications, the more so, as when I came to examine my favourites the *Brahmas*, there was unmistakeable evidence of the mischief that the fear of the vulture-hock disqualification had produced in legs absolutely with feathers as far apart as the raisins in my grandmother's pudding. Numbers of the pens shown were positively deficient in leg feathers. Mr. Boyle's cup birds were beautiful in condition; good in all respects. They were, however, in my humble opinion, closely pressed by an unnoticed pen, belonging to Mr. Lacy, that contained two magnificent hens, only one of them was, I imagine, too old and too fat, and the hinder parts often seemed on the ground. The second-prize birds had nothing to recommend them that I could see. The third-prize cock was wretchedly feathered. A pen from the Rev. W. J. Mellor deserved, but did not obtain commendation. So much for the adult Dark birds. Passing to chickens, I did not see a good pen there, to my fancy. The first-prize birds were coarse-combed and poorly feathered. Mr. Boyle's second-prize was better, but the pullets did not match on the breast. In one respect there was a general improvement—viz., the bronzing of the wing; this was far less visible. In Light birds Mr. Parea had it almost his own way, in spite of his sad loss through railway tender mercies, for which I heartily trust the company will suffer. I cannot say that I liked these birds; generally the poorness of leg-feathering was lamentable. One of the chicken pens that was awarded the third prize was claimed for Her Majesty the Queen, at £50! The single cock class contained the gem of the Brahmas in Mr. Boyle's first-prize bird. He left nothing for me to desire—heavily feathered, short-legged, splendid black breast, evenly spotted, and faultless condition. The rest of the noticed birds in this class were wretched.

Malays.—Yes, to be sure, Bristol had a class for them, and by several it was not the smallest class in the Show. The cock exhibited by Mr. Cooper was a beautiful bird; the hens very poor. The cock shown by Mr. Brooke was a very good-coloured bird.

Of *Crève Cœurs* there was a good entry; but why not Black Polands?

There was a cock in the Poland class that would have made a very respectable Crève Cœur. Mr. Blinkhorn's birds were large and massive-framed.

Game constituted an exhibition in itself; but as I have neither the head-piece, nor the eye, nor the pen of "NEWMARKET," I shall only say that the contest for Mr. Laing's cup was said to be between Lady Holmesdale's Dorkings, Mr. J. Fletcher's Game, and Mr. Parsley's young Spanish; that the latter was first disposed of, then the Game. I could detect no fault in this beautiful pen, whilst condition was faultless. Setting aside that the difficulty of showing a pair of hens is much beyond that of a single hen, I must give my verdict for the Game pen. Mr. J. Fletcher headed all the Game classes for cock and hen.

The *Hamburgh* classes were well filled, and contained beautiful birds. The Silver-spangled are my favourites. The tails seem perfect, but surely the bar on the wing is less marked than in former years. Black Hamburghs had some faces pale with rage at being unnoticed, or else from their Spanish ancestors!

Polands were indeed a splendid class, nine pens out of fifteen entries being noticed. The Silvers were especially good. These birds formed, to my mind, one of the great beauties of the Exhibition, and I trust another year they will be divided into several classes.

In the Any other variety class the first prize went to very large La Flèche. The cock, I should think, was among the heavy birds of the Exhibition.

Bantams, beautiful little pets, and in their own estimation by no means the least important. Mr. Kelleway's cup birds I thought exquisite. I cannot say that I fancied the first-prize single cock Game; he was certainly in splendid fettle, but his wings nearly raked the ground.

The *Ducks*, *Geese*, and *Turkeys* were no mean part of this Exhibition. There was in the Any other variety of Ducks a lovely pair of small Ducks, quite one of the gems of the collection, but what they were I cannot say; and this brings me to one of the mistakes of the Exhibition. The catalogue contained no names of the varieties in the Any other variety classes, so that the uninitiated were perfectly at a loss when examining them.

From various causes there were many empty pens; they were useful in separating specimens. It appeared to me that in this respect the Committee were rather unfortunate, several bleeding combs being noticeable. The Dorking single cocks were in pens decidedly too small. These minor matters, inseparable from the most careful arrangements, were the only drawbacks. No praise is sufficient for the labours of those gentlemen who have been instrumental in providing the west of England with such a treat. May their shadows never be less! and may this experiment prove thoroughly successful, and establish on a firm basis the Bristol and Clifton Poultry Show. The Rifle Drill Hall is perfection—beautifully lighted, equable in temperature, tastefully decorated, and free from smell.

And here I close my doings with a well earned "thank you" to the Committee for such a sight; and when they next invite their friends, as I trust they will, may my birds be there to crow and I to see.—Y. B. A. Z.

KIRKCALDY POULTRY SHOW.

THE annual Show of the Fife and Kinross Society was held at Kirkcaldy on the 7th and 8th inst. There were upwards of 140 entries for Poultry, about 20 of Pigeons, and nearly 100 of Canaries.

The *Game* fowls were much superior to those exhibited in any previous year. *Dorkings* were also very good. Of *Hamburghs*, there was likewise a good show. The Silver-spangled were much admired.

Pigeons were good.

GAME.—*Cock.*—First, A. Spalding, Raith. Second, J. M'Gregor, Crieff. Third, J. Lyall, Kirkcaldy. Highly Commended, H. Goodall, Kirkcaldy. Commended, J. Crombie, Leslie.

GAME (Reds).—First, C. Jamieson, Forfar. Second, T. Baird, Auchtertool. Third, A. Speed, Leslie. Highly Commended, A. Haggart, Leslie. Commended, R. Stewart, Kelty. *Chickens.*—First, C. Jamieson. Second, R. Stewart. Third, H. Goodall.

GAME (Grey).—First, J. Fisher, Kirkcaldy. Second, T. Williamson, Kirkcaldy. Commended, C Jamieson. *Chickens.*—First, A. Speed. Second, H. Goodall. Third, J. Penman, Boreland, Dysart. Commended, J. Chapman, Kirkcaldy.

DORKING (Any variety).—*Cock.*—First and Second, Countess de Flahault, Tullyallan Castle. Third, D. Raines, Bridge Haugh, Stirling. Highly Commended, Countess de Flahault. Commended, D. Normand, Kennoway.

DORKING.—*Chickens.*—First and Second, Countess de Flahault. Third, D. Gellatly, Meigle. Highly Commended, Countess de Flahault.

COCHIN.—*Cock.*—First and Second, Mrs. Oswald, Dunnikier. Third, Earl of Rosslyn, Dysart. Commended, H. Terris, Kelty

COCHIN-CHINA (Any variety).—First and Third, Mrs. Oswald. Second, W. R. Park, Melrose. Commended, H. Terris

BRAHMA POOTRA (Any variety).—First and Second, K. Jopp, Aberdeen. Third, D. Annan, Torr of Moonzie, Cupar, var. Commended, H. Terris.

SPANISH.—First, R. Dickson, Kirkcaldy. Second, J. Beveridge, Kirkcaldy. Third, W. Roberston, Dunfermline. Commended, J. Michie, Wemyss Castle.

HAMBURGH.—*Cock.*—First, R. Hunter, Blairadam. Second, H. Goodall. Third, G. Penman, Prinlaws. Commended, A. Pratt, Kirkcaldy.

HAMBURGH (Spangled).—First, W. Keddie, Cowdonheath. Second, R. Stewart, Kelty. Third, D. Stevenson, Cowdenbeath. Commended, A. Hutton.

HAMBURGH (Pencilled).—First, J. Watson, St. Clairtown. Second, D. Normand. Third, J. Morrison, Alloa.

GAME BANTAMS.—First, A. C. Brown, New Scone, Perth. Second, A. Robertson, Burntisland. Third, H. Anderson, jun., Chapel House.

BANTAMS.—First, A. C. Brown. Second, J. Ness, St. Clairtown. Third, G. Penman.

ANY OTHER BREED.—First, Second, and Commended, Countess de Flahault (La Flèche, Houdan, Crève Cœur). Third, W. R. Park (Crève Cœur).

SELLING CLASS.—First, D. Normand (Dorkings). Second, R. Stewart (Black Red Game).

BANTAM.—*Cock.*—First, J. Young, Kirkcaldy. Second, A. Robertson. Third, A. C. Brown.

DUCKS (Any breed).—First, A. Haggart, Leslie. Second, A. Couper, Dunfermline. Third, A. Spalding.

PIGEONS.

TUMBLERS.—First, J. E. Spence, Musselburgh. Second and Third, J Robertson, St. Clairtown.

FANTAILS.—First, W. R. Park. Second, J. E. Spence. Third, G. Laing, Kirkcaldy.

NUNS.—First, W. R. Park. Second, J. Bogie, Wemyss. Third, R. B. Heggie, Kirkcaldy.

ANY OTHER VARIETY.—First, Countess de Flahault (Jacobins). Second, J. E. Spence (Powters). Third, R. B. Heggie (Barbs).

CANARIES.

SCOTCH FANCY (Yellow).—*Cocks.*—First, G. Binnie, Perth. Second and Third, W. Bonthron, Kirkcaldy. *Hens.*—First, J. Kemp, Galashiels. Second, G. Binnie. Third and Fourth, J Sime, Dunfermline.

SCOTCH FANCY (Buff).—*Cocks.*—First, G. Binnie. Second, J. Mitchell, Third, J. Morrison. Fourth, J. Herdsman, Kirkcaldy. *Hens.*—First and Third, R. Hunter, Oakley. Second, W. Bonthron. Fourth, J. Bennet.

BELGIAN FANCY (Yellow).—*Cocks.*—First, T. Sidey, Dunfermline. Second, J. Cleghorn. Third, T. Kerr, Edinburgh. Fourth, J. Bennet. *Hens.*—First, J. Kemp. Second, T. Sidey. Third, W. Tinlin, Galashiels. Fourth, W. Pitcaithly.

BELGIAN (Buff).—*Cocks.*—First, T. Sidey. Second, J. Kemp. Third, J. Bennet. *Hens.*—First, J. Cleghorn. Second, J. Kemp. Third, W. Tinlin. Fourth, W. Pitcaithley.

FLECKED FANCY (Yellow).—*Cocks.*—First, T. Kerr. Second, G. Spence. *Hens.*—First, W. Bonthron. Second and Fourth, R. Hunter. Third, J. Gardener.

FLECKED FANCY (Buff).—*Cocks.*—First, R. Hunter. Second, J. Gardner. Third, A. Fleming, Dysart. *Hens.*—First, J. Morrison. Second, R. Hunter. Third and Fourth, J. Herdsman, Kirkcaldy.

GOLDFINCH MULES (Marked, Yellow).—*Cocks.*—First, J. Robertson, Aberdour. Second and Third, W. Kirk.

GOLDFINCH MULES (Marked, Buff.—First, A. Fleming. Second, Third, and Fourth, W. Kirk.

SELLING CLASS (Any variety).—First and Second, Mrs. Wilson (Yellow Flecked and Buff Hen). Third, A. Clark (Buff Cock).

JUDGES.—*Poultry:* Mr. Anderson, Ruthven House. *Pigeons and Canaries:* Mr. A. Stewart, Perth; Mr. Thomas Haddow, Glasgow.

NEWCASTLE-ON-TYNE COLUMBARIAN SOCIETY.

THE second annual Exhibition of this Society was held on the 1st inst., in a very commodious room at the Phœnix Inn, Newgate Street, Newcastle-on-Tyne.

The Show was confined to members, and only for birds bred during the year, but the Exhibition was open to the public at 6*d.* each admission. The pens were "home-made," all on a level, and, considering circumstances, answered the purpose well.

The birds were both numerous and good, especially Short-faced Tumblers and Fantails. The first prize for Almonds was awarded to a first-class head-and-beak cock with fine carriage and good eye, but deficient in colour; the second went to a promising hen of good colour, but not equal in other properties. Several other good Almonds were worthy of notice, and there is a great improvement in Short-faced Tumblers in this district. In the class for Any other variety of Short-faced birds, the first prize was taken by a fine Red Mottle, and the second by a good Kite. The class also contained a good Dun. Powters were numerous, being fair average birds (Ash cock first, and Red hen second). Some promising Blues also competed. Carriers were not so good; the prize birds showed a little style, but were weedy and light in beak. Barbs were poor. Owls were rather numerous, and were of the old English Blue variety. The prize pair were small and good of their kind. In Trumpeters the class was only small; the first prize was awarded to a fair average Black. In Jacobins, a pair of small Reds were unmistakeably the winners. Some Yellows were shown in capital condition, but were large and coarse. Turbits formed a very good class. A pair of good Swallows were exhibited, one of which took an extra prize for the best Toy in the Show. The prize Nuns and Magpies were good. Fantails were a very creditable collection, the prizetakers (cock and hen) ought to go together, and would undoubtedly hold a prominent position at some of our best Shows.

We would suggest that in future there should be separate classes for cocks and hens, instead of allowing them to compete together; it would be much more satisfactory and give all an equal chance.

We wish the Society every success, and trust that the next Show will far exceed the present one.

TUMBLERS (Almond, Short-faced).—First, T. Thompson, Wide Open. Second, W. Petre, Felling.

SELF-COLOURED TUMBLERS (Short-faced).—First, W. Petre. Second, R. Daniels, Newcastle-on-Tyne.

Powters (Any colour).—First and Second, T. Thompson.
Carriers.—First and Second, N. Stephenson, High Felling.
Barbs.—First, R. Daniels. Second, W. Petre.
Trumpeters.—First, J Bell, Newcastle-on-Tyne. Second, R. Daniels.
Turbits —First, W. Byers, Seaton Sluce. Second, H. Morrow, Carrus Hill.
Jacobins.—First, C. Vaux, Sunderland Second, R. Daniels.
Fantails.—First, R. Fawdon, Gateshead. Second, R Daniels.
Owls.—First, W. Brown, Low Fell. Second, R. Fawdon.
Nuns.—First and Second, J. Bell, Newcastle.
Tumblers (Almond, Coloured).—First and Second, R. Fawdon.
Tumblers (Yellow).—First and Second, P. Stephenson.
Bald Head.—First, H. Morrow. Second, P. Stephenson.
Beards.—First and Second, W. Petre.
Dragons.—First, R. Fawdon. Second, P. Stephenson.
Antwerps.—First and Second, J. Bell.
Swallows —First and Second, W. Byers.
Blue Rocks.—First and Second, H. Wardle, Newcastle.

Mr. J. R. Robinson, of Sunderland, officiated as Judge, and his awards gave general satisfaction.

THE WHITEHAVEN POULTRY AND PIGEON SHOW.

This year's Show proved an exceedingly good one; in fact, whilst the quality and condition of the birds manifested a very great improvement, there were considerably more than a hundred entries beyond those of any preceding year. This fact, though augurring well for the stability of the Whitehaven Show, seems rather to have taken the Committee by surprise, and necessitated an arrangement of the pens that was not so efficient as it otherwise might have been, causing many of the bottom pens to be placed so low that inspection of any kind was a work of considerable difficulty, as they rested on the ground itself, whilst a great portion of the Game cocks was, as being in the third tier, placed far above the heads of the majority of spectators. This unexpected increase in numbers had, of course, to be immediately provided for as the Committee best could, but we are told that that body purpose in future years to make an improved arrangement of the pens, by which the light—by no means too much, under the most favourable circumstances, and this year increased by the disadvantage of a very dull cloudy day—will be no longer impeded. It would be well, too, whilst these alterations are under consideration, to increase both the height and the depth, from back to front, of the Pigeon pens, as they are not sufficiently large for the birds to turn without injury to their plumage. There might also be an improvement in another department of the Exhibition, for under present plans the show of eggs, which certainly seems a very popular part of the Exhibition, enjoys the very best of lights in the whole Riding School, and which would be much better appropriated to the best of the varieties of poultry. We cannot, however, do otherwise than congratulate the Committee on the general success of the undertaking; and the progressive manner in which for nine years this Show has been now carried on, affords great encouragement to renewed exertions.

As *Game* classes are first on the Whitehaven list, we refer to them accordingly. In these classes, Mr. Fletcher, of Stoneclough, near Manchester, had the almost exclusive possession of the highest positions on the prize list. It is certain a long time has elapsed since so perfect a collection of Game fowls of all varieties has been exhibited by any single individual. The manner in which they were selected for the Show, and the extraordinarily good condition in which every pen of this gentleman's fowls was shown, cannot be too highly praised They had obviously been under very experienced management, and these birds were evidently at the very moment quite as ready and willing to support their claim in the cock-pit itself, as they had been in the exhibition-pen. The competition in all the Game classes was far greater than usual, the liberal prize list causing great rivalry. We always like to see the greatest amount of emulation between exhibitors, as it directly promotes the well-being of poultry shows. At the same time we cannot speak more strongly than we feel against the fearful amount of "trimming" now unfortunately resorted to by many Game exhibitors, both as to the hackles and many other portions of the plumage of the Game cocks. At Whitehaven Show it is certain that several pens of Game fowls had the under feathers so artistically cut out that they were exhibited almost as devoid of feather as though ready for immediate battle. It is evident this very act caused many fowls to lose all chance of position, although they might have stood well on the prize list if they had been simply left alone. In *Dorkings* the Show was very good, but the fatal objection, now too general, of spurs turning outside the legs instead of inwards, was more universal than we remember to have previously witnessed at any show. The *Spanish* classes were particularly good, more especially the adults, though several of the heavy corrugated-faced birds, formerly far more popular than they are at the present day, were evidently blind altogether, or so nearly so, as to be useless alike for exhibition or procreation. Some excellent *Cochins* were shown, Mr. Fenton sending a collection of great value. Perhaps the best classes of Cochins were the Partridge-coloured, but they enjoyed so slight a proportion of daylight, that it was difficult to distinguish them. In *Brahmas* there was a good display, but one or two of the best pens were labouring under such complete prostration from continuous exhibition, that their chance of success whilst so depressed was obviously bygone. The *Hamburghs* were worthy of most favourable mention, especially the Spangled varieties. As faithful journalists, however, it is our painful duty to briefly allude to the cruelty practised on the cock in Pen 260, of Golden-spangled Hamburghs, that once discovered not only lost a most excellent pen every chance of success, but resulted also in its immediate "disqualification," to say nothing of the absolute disgrace to the owners ever attending such exposures. We really regret that the simple feeling of self-respect, independently altogether of a more proper and a higher motive, does not exercise a sufficient restraint upon the minds of every exhibitor, to prevent the adoption of such grossly unfair means of obtaining prizes undeservedly. It is admitted that such deceptions may possibly at the outset succeed in eluding the Judges, owing to the brevity of time allowed them for making their decisions, and that premiums may, perchance, be secured otherwise unattainable, but on discovery, the disgrace ever following on such exposure, will certainly outweigh unmerited success. Most probably from the cock's comb being either hollow or too wide, the poor bird's comb had actually had a large piece cut completely out of the centre of it, and it was afterwards sewn tightly together again, entirely through and through, the stitches still remaining. Its sufferings must have been great, and Messrs. S. & R. Ashton, of Mottram, have only themselves to blame for their present most unenviable position.

The Black and also the Game *Bantams* were very good; and the *Turkeys* were of unusual weight. One cock Turkey alone weighed 31½ lbs., and a single hen drew the scales in her favour at fully 18 lbs. Some beautiful specimens of Sebastopol *Geese* were also exhibited in capital feather.

Among the *Ducks* shown in the class reserved for "Any other variety" (excepting Aylesburys and Rouens), were two pairs of Shell Ducks, the best of which obtained the high distinction of winning not only their own first prize, but also the silver cup given to the best pen of Ducks of any description. Such an achievement as purely fancy waterfowls being the recipients of a prize of this kind rarely occurs, but in this case so lovely a pen of birds well deserved it. They were exhibited in the most resplendent feather, were faultless in condition, and as being two or more years old were pure in the colour of the bills as the brightest polished red coral. This pen was exhibited by Mr. Charles Jennison, of Belle Vue Zoological Gardens, near Manchester, and reflected the highest possible credit on the management of that gentleman. They were entered at the very low price of £3 7*s.* 6*d.* It is needless for us to say they are no longer the property of Mr. Jennison, there being quite an excitement among many amateurs to claim them. The lucky purchaser, however, we are glad to say, is an amateur of great experience, who has excellent arrangements for their future well-doing, and no doubt under his care we shall be able to report many future successes to this truly magnificent pen.

Among the many other oddities exhibited, was a couple of very nicely plumaged Californian Quails, that although not by any means scarce at the present day, appeared to be quite a novelty in this neighbourhood, the singularity of the reversed crest and general plumage exciting a host of admirers among the visitors all the time the Show was open to the public. This pair of birds was defended by the really prohibitory price fixed on them of £1000! A single hen of this species, still in our possession, laid forty-three eggs last season, and a fellow bird nearly the same number, proving they will, therefore, breed in an aviary freely under favourable circumstances, though the males in spring are usually most pugnacious, and, consequently, many old birds of this description cannot be kept together.

Game.—*Cock.*—First and Cup, J. Fletcher, Stoneclough, Manchester. Second, C. W. Brierley, Middleton, Manchester. Third, J. H. Wilson, St. Bees, Cumberland. Fourth and Fifth, Sir St. G. Gore, Bart., Hopton Hall, Derbyshire. Highly Commended, J Fletcher; Sir St. G Gore, Bart. Commended, J. Haroie, Sorbie Ewes, Langholm. *Cockerel.*—First, W. Boulton. Second and Third, Sir St. G. Gore, Bart.

Game (Black-breasted and other Reds).—First, J. Fletcher. Second, J. H. Wilson. Third, C. W Brierley. Highly Commended, Sir St. G. Gore, Bart. Commended, J. Geldard, Collincroft, Kendal.

Game (Duckwing and other Greys and Blues).—First, J. Fletcher. Second and Third, Sir St. G. Gore, Bart. Commended, R. Pickering, Carlisle.

Game (Any other variety).—First and Cup, J. Fletcher (Piles). Second, Sir St. G. Gore, Bart. (Piles). Third, R. Whittan, Burnley. Highly Commended, H. Thompson, Maiden Hill, near Penrith. *Pullets.*—First, J. H. Wilson. Second, Sir St. G. Gore, Bart. (Duckwing). Third, Rev. W. J. Mellor, Nottingham (Brown Red). Highly Commended, E. Swainson, Nibthwaite, Greenodd, Newton-in-Cartmell (Black Red); Sir St. G. Gore, Bart. (Duckwing).

Dorkings (Silver-Grey).—First, T. L. Jackson, Bush of Ewes, Langholm. Second, H. Heys, Barrhead. Third, R. D. Holt, Orrisehead, Windermere. *Chickens.*—First, R. D. Holt. Second, J. Hardie. Third, W. W. Rattlidge,

Dorkings (Any other variety).—First, H. Beldon, Goitstock, Bingley. Second, R. D. Holt. Third, T. Rogers, St. Helen's, Lancashire. *Pullets.*—First and Cup, T. Rogers. Second, J. Fox, Whitehaven. Third, J. Hardie. Highly Commended, J. H. Wilson; H. Savill, Ollerton, Notts; Messrs. Gunson & Jefferson, Whitehaven. Commended, H. Savill; A. Thompson, Whitehaven. *Chickens.*—First, R. D. Holt. Second, W. W. Ruttlidge. Third, T. Oliver. Highly Commended, Duke of Newcastle.

Spanish.—First and Cup, H. Beldon. Second, Messrs. Burch & Boulter. Third, T. B. Hartley, Heywood, Manchester. Highly Commended, A. Ridpath, Edinburgh; J. Thresh, Bradford. Commended, Miss Biggar, Ecclefechan, Dumfries; E. Brown, Sheffield; J. H. Wilson. *Chickens.*—First, H. Beldon. Second, T. Cliff, Hanley, Staffordshire. Third, Miss Biggar. Highly Commended, A. Ridpath; Miss Biggar; Messrs. Burch and Boulter; D. Gellatly, Meigle. Commended, Mrs. Rawlinson; R. Soaley, Livexy, near Blackburn. *Pullets.*—First, W. Roberts, jun. Second, Messrs. Burch & Boulter. Third, J. Thompson, Bingley. Highly Commended, T. B. Hartley; W. Paterson, Langholm; G. Robinson, Kendal; J. H. Wilson.

COCHIN-CHINA (Cinnamon and Buff).—First and Cup, H. Beldon. Second, C. W. Brierly. Third, J. Cattell, Birmingham. Highly Commended, Rev. F. Taylor, Kirkandrew Rectory, Longtown. *Chickens.*—First and Second, A. Fenton, Crimble Hall, Rochdale. Third, H. Mapplebeck, Birmingham. Highly Commended, W. Copple, Ecclesten, Prescot.

COCBIN-CHINA (Grouse or Partridge .—First, T. Stretch, Omskirk. Second, J. Stephens, Walsall. Third, E. Tudman, Whitchurch, Salop. Highly Commended, C. W. Brierley. *Chickens.*—First, A. Fenton. Second, E. Tudman. Third, J. Herrocks, Tonge, Middleton, Manchester. Highly Commended, C. Benson, Darlington. Commended, J. Horrocks.

COCHIN-CHINA (White).—First and Third, R. Smalley. Second, H. Beldon. Commended, J. H. Wilson.

COCHIN-CHINA (Any colour).—*Pullets.*—First and Third, C. W. Brierly. Second, Messrs. Gunson & Jefferson. Commended, J, Poole, Ulverston.

BRAHMA-POOTRA (Any variety).—First, W. Hargreaves, Newchurch Road, Bacup. Second, Rev. W. J. Meller. Third, H. Lacy. Highly Commended, Mrs. M. Seamons, Hartwell, Aylesbury, Bucks; T. Pomfret, Houghton Lane, near Preston. *Chickens.*—First, R. W. Boyle, Galtrim House, Bray, Co. Wicklow. Second, H. Lacy. Third, J. Pool. Highly Commended, Miss E. A. Aglionby, Hawkshead, Lancashire. Commended, Capt. C. J. Ewen, Lowther Street, York.

HAMBURGHS (Golden-spangled). — First, H. Beldon. Second, J. H. Wilson. Third, F. Robinson. *Chickens.*—First, H. Beldon. Second, C. W. Brierly. Third, N. Marlor, Denton, Manchester. Disqualified, Messrs. S. & R. Ashton, Mottram, Manchester, a piece being designedly cut out of the cock's comb, and afterwards sewn up again.

HAMBURGHS (Silver-spangled).—First and Cup, A. K. Wood, Castle Donnington, Derby. Second, J. Robinson. Third, J. Smalley. Commended, H. Beldon. *Chickens.*—First, H. Beldon. Second, J. Smalley. Third, E. Hird, Ulpha, Broughton-in-Furuess. Highly Commended, J. Robinson.

HAMBURGHS (Golden-pencilled).—First and Third, H. Beldon. Second, S. Smith, Northowram, Halifax. *Chickens.*—First and Third, H. Beldon. Second, T. Wrigley, jun., Tonge, Middleton, Manchester. Highly Commended, R. Burrow, Longtown, Cumberland. Commended, R. Little, Longtown, Carlisle.

HAMBURGHS (Silver-pencilled).—First and Second, H. Beldon. Third, T. Sharples, Forest Bank, near Rawtenstall. *Ccickens.*—First and Third, H. Beldon. Second, H. Pickles, jun., Earby, near Skipton. Highly Commended, T. J. Harrison, Singleton Park, Kendal; J. Platt, Lancashire. Commended, J. White.

HAMBURGH.—*Pullets.*—First, H. Beldon. Second, R. Burrow. Third, J. Birkett, Kendal.

POLANDS (Any variety).—First and Second, H. Beldon. Third, J. Smith, Keighley. Commended, J. Percival, Harborne, near Birmingham.

ANY VARIETY EXCEPT BANTAMS.—First, H. Beldon (Black Hamburghs). Second, Miss A. M. Bass, Broughton, Carlisle (La Flèche). Third, J. Newby, Muncaster Head, Raveoglass (Russian). Highly Commended, J. G. Milner, Leyburn, Yorks (Houdan); W. F. Dickson, Whitehaven (Houdan); F. W. Znrhorst, Dennybrook, Dublin (Houdan).

SELLING CLASS.—First and Third, H. Beldon. Second, J. Thompson (Spanish). Commended, J. Munn, Stackstead, Manchester (Brahmas); G. Arbuthnot, Mairsbank, Edinburgh (Brahmas, Partridge Cochin); C. W. Brierley; J. Towserson, Whitehaven (Dorking); R. Payne, Brierfield, near Burnley; Messrs. Gunson & Jefferson; J. W. Harrison, Spalding (Teal Ducks); M. Irwin, Whitehaven (Polands); E. G. Jones, Parton, Whitehaven (Rouen); G. H. Roberts.

GAME BANTAMS.—First, C. W. Brierley. Second, Sir St. G. Gore, Bart. Third, J. A. Collinson, Halifax. Highly Commended, J. Crossland, jun., Wakefield; A. Fenton; E. Joynson, Liscard, Cheshire; W. Hedgon, Darlington. Commended, Messrs. Bowman & Fearon, Whitehaven.

GAME BANTAMS.—First and Third, J. Crossland, jun. Second, C. W. Brierley. Highly Commended, Rev. W. J. Mellor; J. Shaw, Mount, Pleasant, Halifax; C. Ashworth, Halifax; R. Charlesworth, Halifax. Commended, E. Joynson.

BANTAMS (Gold or Silver-laced).—First, M. Leno, The Pheasantry, Markyate Street, near Dunstable, Beds. Second, T. C. Harrison. Third, Messrs. S & R. Ashton (Silver-laced). Highly Commended, Mrs. Saltmarsh, Chelmsford (Geld-laced).

BANTAMS (Any other variety).—First, Cup, and Second, H. Beldon. Third, H. Savill (Japanese Silkies). Highly Commended, H. Ashton, Prestwich, Manchester (Rose-combed White-booted). Commended, E. Hatton.

DUCKS (White Aylesbury).—First, E. Leech, Rochdale. Second and Third, Mrs. M. Seamons.

DUCKS (Rouen).—First, J. Munn. Second, A. Dickinson. Third, E. Leech. Highly Commended, J. Hardie; J. W. Harrison.

DUCKS (Any other variety).—First and Cup, J. Jennison (Shell Ducks) Second, H. Savill (Carolinas). Third, C. W. Brierley. Highly Commended, E. Hutton (Mandarin; Mrs. J. M. Armstrong, Wigton, Cumberland (Shell Ducks); C. W. Brierley; Sir St. G. Gore, Bart. Commended, Miss Spedding (Ronen and Muscovy)

GEESE (Any variety).—First, Messrs. J. & J. Coupe, Rawtenstall. Second, J. Hardie (Toulonse). Third, H. Savill (Sebastepol). Highly Commended, B. Baxter (Toulouse); J. Hardie (Toulouse).

TURKEYS (Any variety.—First, J. Hardie (Cambridge). Second, J. Fox, Whitehaven. Third, E. Leech. Highly Commended, T. L. Jackson (Norfolk).

RABBITS.—*Lop-eared.*—First, Messrs. Bowman & Fearon. Second and Third, W. Allison, Sheffield. *Any other variety.*—First, J. W. Harrison (Leporides). Second, H. G. Dalton (Angora Buck). Third, J. Lucas (Angora Doe). Commended, D. Fisher, Sandwith; T. Pomfret, Houghton Lane, near Preston (Himalayan Doe).

CONFINED TO THE COUNTY OF CUMBERLAND.

GAME.—*Cock.*—First and Cup, T. Swinburn, Whitehaven. Second, H. Thompson. Third, J. Weeks, Cumberland. Highly Commended, R. Pickering. Commended, J. Harris, Wigton.

GAME (Any variety).—First, J. Brough, Carlisle. Second, G. Bell, Wigton. Third, J. Mitchell, Egrement. Highly Commended, J. H. Wilson. Commended, Messrs. Bowman & Fearon.

GAME (Any variety).—First, J. H. Wilson. Second, R. Pickering. Third, G. Bell, Lamplough.

DORKINGS.—*Cock.*—First, J. H. Wilson. Second and Third, Messrs. Gunson & Jefferson. Fourth, G. Dixon, jun.

DORKINGS (Any variety).—First and Second, Messrs. Gunson & Jefferson. Third, G. Dickson, jun.

SPANISH.—*Cock.*—First and Third, J. H. Wilsen. Second, W. Hale, Whitehaven. Fourth, Withheld.

SPANISH.—First and Second, J. H. Wilson. Third, G. Mawson, Cockermouth.

COCHINS OR BRAHMAS.—*Cock.*—First and Second, Messrs. Gunson and Jefferson. Third and Fourth, W. Burnyeat, jun., Whitehaven.

COCHINS OR BRAHMAS.—First, Messrs. Gunson & Jefferson. Second, Messrs. Bowman & Fearon. Third, J. H. Wilsen. Commended, Messrs. Gunsen & Jefferson.

HAMBURGHS.—*Cock.*—First, J. Hargreaves. Second, J. Fox. Third, J. Brough.

HAMBURGHS (Any variety).—First and Second, Messrs. Bowman and Fearon (Silver-pencilled). Third, J. H. Wilson (Gold-spangled). Commended, H. J. Nicholson, Whitehaven (Geld-spangled).

BANTAMS.—*Cock.*—First, Messrs. Bowman & Fearon. Second, M. W. Taylor, Penrith. Third, J. Mossop, Rottington Hall.

BANTAMS (Any variety).—First, H. J. Nichelsen (Black Red). Second, Messrs. Bowman & Fearon (Black Red). Third, J. Wallas, Highmere, Wigton.

DUCKS (Any variety).—First and Cup, Messrs. Bowman & Fearon (Aylesbury). Second, J. Towerson, Whitehaven. Third, W. F. Dixen. Highly Commended, Messrs. Gunson & Jefferson

A silver cup or piece of plate, given by G. C. Bentick, Esq., for the most sucessful exhibitor of Poultry.—H. Belden.

PIGEONS.

CARRIER.—*Cocks.*—First, J. Thackray, York. Second, E. E. M. Royds, Greenhill, Rochdale. Highly Commended, E. Brown. *Hens.*—First, J. Hawley, Bingley, Yorks. Second, G. H. Roberts, Penwortham, Preston. Highly Commended, E. E. M. Royds.

POWTERS.—*Cocks.*—First, J. Thackray. Second, J. Hawley. Highly Commended, E. E. M. Royds. Commended, J. Thackray; R. Dodge. *Hens.*—First, J. Thackray. Second, J. R Robinson. Highly Commended J. Hawley; E. E. M. Royds. Commended, J. Thackray.

TUMBLERS Almond.—Prize, J. Thackray.

TUMBLERS (Bald-headed).—First, J. Hawley. Second, J. Fielding, jun., Rochdale.

TUMBLERS (Any other variety).—First, J. Thackray (Beards). Second, J. Percival. Commended, J. Thackray (self-colour yellow); H. Mapplebeck.

JACOBINS.—First, F. Else. Second, J. Thompson. Highly Commended, R Thompson.

TRUMPETERS.—First, J. Hawley. Second, R. Dodge. Commended, J. R. Robinson, Sunderland.

BARBS.—First, G. H. Roberts. Second, J. R. Robinson.

TURBITS.—First, R. Thompson. Second, Highly Commended, and Commended, J. Thackray.

OWLS.—First and Second, J. Fielding, jun. Highly Commended, J. Thackray; J. Thompson; E. E. M. Reyds.

FANTAILS.—First, J. Hawley. Second, H. Yardley, Birmingham. Highly Commended, R. Dodge; F. Else, Bayswater, London.

ANY OTHER DISTINCT VARIETY.—First and Second, J. Thackray. Third, J. W. Harrison, Spalding (Hyacinths). Highly Commended, J. R. Jessop (American Passenger); J. Hawley; H Yardley; J. Waitt, Richmond, Sparkbrook, Birmingham; E. E. M. Royds. Commended, J. Thackray; H. B. Whittaker, Middleton (Archangels); H. Yardley.

SELLING CLASS.—First, J. Thackray. Second, J. Waitt. Highly Commended, J. Hawley (Dragons and Magpies); J. Waitt; F. Key, Beverley (Barbs); E. Brown (Carriers); J. Thompson; E. E. M. Royds; H. Miers, Whitehaven (Baldheaded Tumblers).

A Silver Cup or Piece of Plate valne Two Guineas, presented by the Committee to the most successful exhibitor of Pigeons—J. Thackray.

CANARIES.

BELGIAN (Yellow).—Prize, J. Walker.

BELGIAN (Buff).—First, J. Walker. Second, J. Bewley, Penrith.

MULE (Yellow).—First and Second, H Ashton.

MULE (Bun).—First, W. Graham, Carlisle. Second, H. Ashton. Highly Commended, J. Thompson, Marypert. Commended, H. Ashton.

PIEBALDS (Yellow or Buff).—First, J. Boulton, Ulverston. Second, J. Rigg, Cumberland (Buff).

LIZARDS (Gold or Silver-spangled).—First, J. Thompson (Gold). Second, Mrs. F. Johnson, Carlisle (Gold). Highly Commended, J. Thompson (silver).

JUDGES.—*Poultry:* Edward Hewitt, Esq., Eden Cottage, Sparlbrook, Birmingbam; and Richard Teebay, Esq., Fullwood, Preston. *Geese, Turkeys, Ducks, Rabbits, and Pigeons:* W. B. Tegetmeier, Esq., Maswell Hill, London. *Canaries:* A. Benson, Esq., Whitehaven.

SUNDERLAND BANTAM SHOW.

THE Association, known by the appellation of the Sunderland Poultry Society, beld its first Exhibition in the Athenæum on New Year's-day, and it proved a great success, both financially and as a meritorious display of birds. The competition was confined exclusively to Bantams, and considering the small latitude given, the entries were very nnmerous.

Mr. Sim, of Cramlington, officiated as Judge, whose awards appeared to give entire satisfaction. Mr. Sim pronounced the collection to be first-class.

It had been intended at first to have held it as a close show amongst members of the Society only, hnt the unmerous entries indnced the Committee to throw it open to the pnblic. There were several Bantams not for competition, which were very praiseworthy, amongst whicb may be mentioned a pen of White Rose-combed Bantams belonging to Mr. C. Grimshaw, which were well formed and well feathered. The same exhibitor had a good pen of Black-breasted Reds, and may he complimented on the specimen which took the first prize amongst single Pile cocks, which was exceedingly glossy, fnll feathored, and prond in carriage. His first-prize pen of Piles contained a pair of beautiful hens, of remarkable similarity, every mark in one seeming to be identical in the other. The best single cock which took an extra

prize was a Black Red belonging to Mr. F. Grimshaw, the prize being given by Mr. F. Hunter. This specimen was extremely glossy. The first-prize specimen in single Japanese hens was a proud and dignified bird belonging to Mr. G. Lilburn. The same gentleman possessed the most lively and vigerous pen in the Show, which undoubtedly merited the first prize which was awarded to them in the Duckwing class.

The following is the list of prizes :—

Game (Black Red).—First, — Mallen. Second, C. Grimshaw. *Single Cock.*—First, C. Grimshaw. Second, — Rodgers. *Single Hen.*—First, C. Vaux, jun. Second, C. Grimshaw.

Game (Duckwings).—First, — Lilburn. Second, — Mallen. *Single Cock.* —First and Second, G. Lilburn. *Single Hen.*—First and Second, R. Youll.

Game (Piles).—First, C. Grimshaw. *Single Cock* and *Single Hen.*—First, C. Grimshaw.

Game Hens (Black).—First and Second, R. Youll.

Game (Japanese).—*Cock.*—First and Second, G. Lilburn. *Hen.*—First, G. Lilburn.

Extra Prizes.—For best pen in the Show, given by Mr. J. W. Grimshaw. — Mallen. For best Black Red Single Cock, given by Mr. F. Hunter. — Mallen. Ditto Hen, given by Mr. Grimshaw.—C. Young, jun. For best Duckwing Cock, given by Mr. F. Grimshaw. — Lilburn. Best Cock above one year old, given by Mr. Youll. — Hunter, For best single hen of any breed, given by Mr. C. Vaux.—C. Grimshaw.—(*Sunderland Herald.*)

BROOD REMAINING UNDEVELOPED.

INFLUENCE OF AN ABUNDANT SUPPLY OF WATER ON THE PRODUCTION OF BROOD.

The translation from Dzierzon by "A Devonshire Bee-keeper," in page 419, brings to my mind a question which I asked through your Journal some time since, but to which no reply was made. The question was, What is the reason that bees sometimes fail to hatch their young? Doubtless, many may think that cold weather or the want of pollen for food was the cause; but this was certainly not the case with those I referred to, and I will relate one of many similar cases that have come under my notice, and shall be glad of any information on the subject. On the 15th of July I deprived a strong hive of its queen, giving it a ripe royal cell, which was hatched-out and well received in about twelve hours, the queen becoming a mother, or one able to be a mother, in a few days, laying eggs in abundance. I looked forward with anxiety to the time of hatching, being somewhat sanguine of a pure impregnation in consequence of her time out being very brief, the weather not being favourable for a long flight; in fact, so much so, that no other queen ventured out. The period having arrived at which young bees were expected, I made an examination, hoping to see well-marked Ligurians, but to my great disappointment there were only eggs and grubs, in number about twenty thousand. The frames were, therefore, dropped into their places, and I expected that in ten days or so I should be sure to see young bees. When that time arrived I examined the hive again, but not a single young bee or grub was to be seen. Thinking then that the weather was the cause, I commenced feeding, and continued it until the end of October; but all this time not a single bee was hatched. Just as they were ready for sealing they disappeared, although all the rest of my stocks were showing young bees in abundance. It being one of my best hives, I have been much puzzled to account for the aberration, and, as may be expected, it is now greatly reduced in numbers, and as yet not a single bee has been hatched.—A Lanarkshire Bee-keeper.

[I have a very strong impression that this remarkable instance of non-development is due to that mysterious disease foul brood, and that it is in point of fact one of its phases.

As bearing on the fact of the production of brood being promoted by an abundant supply of water, I may relate a mishap which occcurred in the autumn of 1864, when an attempt which I made to transmit a colony of Ligurians to Queensland was entirely frustrated by the extent to which breeding was carried during their imprisonment. The stock was heavy, and being by no means a very populous one, I deemed its store of provision sufficient to last from three to four months. When the voyage, which was protracted to ninety days, was somewhat more than half over, the gentleman who had charge of the bees suspecting something wrong from their unusual silence, lifted and inspected the hive, when the actual state of affairs became at once apparent—their store of provisions had given out and all had died of starvation. That this fatal result was produced by excessive breeding during the voyage, was evidenced by the fact that the mass of dead bees from this originally weak colony lay from 3 to 4 inches deep (or as my correspondent expressed it, the full depth of his finger), in a receptacle 14½ inches square! There was attached to the hive an apparatus for permitting the daily supply of water, which had been carefully attended to. The heat of the tropics had probably stimulated the breeding powers of the queen, and the result had been such a drain upon the stores of the hive as to exhaust them when the journey was little more than half over. —A Devonshire Bee-keeper.]

LIMITING THE PRODUCTION OF DRONES.

In regard to destroying drones and substituting worker for drone combs, either with or without brood, I doubt if so much benefit is derived as is expected, when we take into consideration how prone bees are to transform worker into drone comb when they are inclined to raise drones. The extra honey consumed and the time occupied in doing this will be as disadvantageous as if they had been let alone. Before I possessed Ligurians I used to think that I prevented the raising of drones by giving young queens as early as the season permitted me to destroy the old queens, and substituting ripe queen-cells a day or so afterwards, when, if the weather was fine, not much time was lost in breeding, and if plenty of room was given, a large quantity of worker and very little drone brood was deposited until the stocks were removed to the heather, when, if the weather was fine, they commonly produced a good many drones. I have invariably found that when an unusually large number of drones are being hatched, young queens are brought forward, and a change of queens may be expected.—A Lanarkshire Bee-keeper.

[Never having witnessed an instance in which bees have transformed worker into drone comb, or *vice versâ*, we rather doubt whether they are so prone to effect this transformation as our correspondent imagines.]

OUR LETTER BOX.

Langholm Poultry Show.—The first prize for Spanish was taken by James Thresh, not Huesh. The error is not ours, but the catalogue's.

Feather of White Cochin-Chinas (*A Very Old Subscriber*).—There is so slight a tint upon the tips of some of them, that we should not call them coloured. It is not so strong as in what is called French white.

Breeding Duckwing Game Fowls (*Chanticleer*).—You ask if you are likely to breed good Duckwings from a good Duckwing cock with good pullets of the Black-breasted Red breed? In reply, crossing different colours is wrong, as a rule, and is likely to breed mongrel-coloured mixtures. Breeding from pullets at all is also wrong, as a rule, for they are too young. To breed the best Duckwings, put a good Duckwing cock to from two to four good Duckwing hens. Cock and hens of different strains are to be preferred, with short bodies, square shoulders, good necks and heads, and legs and thighs well placed. As a Cheshire breeder, I should try to obtain the "Old Cheshire Silver Duckwings," once so celebrated, as they are purer and gamer than the Yellow or Birchen Duckwings, and are harder birds in flesh and feather. You may, however, breed some good birds from the cross proposed, as the cock is a Duckwing; most of them will probably have too much red and brown from the Red cross. Willow-legged Black-breasted Reds are softer, weaker, and less game than Willow-legged Duckwings.—Newmarket.

Breeding Dark-blood Pile Game Fowls (*Idem*).—As to whether you are "likely to breed good Dark-blood Piles from Light Pile hens and pullets with a Black-breasted Red cock," Piles are best bred from Piles; hens better than pullets. Bright-red-eyed White-legged Piles are best, of a bright red colour. Dark-coloured Piles are too slow. The Piles, if good white-legged birds, are superior to most Black-breasted Reds. In crossing the colours named for breeding Piles, the cock should be a Pile and the hens Partridge-coloured. However, a few good birds may be thrown from the cross proposed. No Piles are first-rate unless with red eyes and white legs, and reddish birds.—Newmarket.

Size of Game Cocks (*Idem*).—I think all cocks above 5½ lbs. in weight are too slow and often too clumsy. The articled weights for fighting at the Royal Cockpit, Tufton Street, Westminster, London, were from 3 lbs. 6 ozs. to 4½ lbs.; all above this were "byes" or "turn-outs," and fought as such.—Newmarket.

Poultry in Confined Space (*Crève Cœur*).—Buff Cochin-Chinas or Dark Brahma Pootras will best suit you. The food mentioned in the Manual will be correct.

Cross-breeding (*A. R. B.*).—We are not very friendly to crosses, but hardly think that you propose a good one. We do not cross between sitters and non-sitters, which would be the case if the mixture were between Brahma and Houdan. We think very highly of both. The latter are excellent layers; as good, we think, as the former. Both are hardy alike, and as they bear confinement, we see little difficulty in keeping both. Bean and pea meal have a tendency to make flesh hard. They may do for the old stock, but they will not do for those intended for table.

Fattening Turkeys *H. M. B.*).—There is no book published on the management of Turkeys. Shut the birds up in any place where they can perch and roost warmly at night. Let them have a trough of food by them made of oats, barley, and a few beans, all ground together and slaked with milk to be nearly liquid. Let them be fed three times per day, a good bellyful each time, but not more than they will eat. They must have gravel and water. If put up in good condition, three weeks or a month of this should fatten them.

Shifting Hives (*A. B.*).—Any time of the year you may move stock hives a few yards, doing it by little and little, shifting them slightly and with extreme care, to prevent disturbance, every mild day, so as to bring them gradually into their new position.

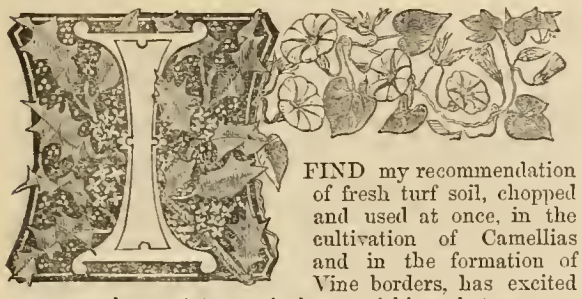
Stove for Harness-room (*Omega*).—One of Hays's Constant Stoves at 3 0*s.* will suit you. They are advertised in our columns.

WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 24—30, 1867.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
24	Th	Bulbocodium vernum.	42.7	30.7	36.7	18	53 af 7	32 af 4	7af10	40 af 9	18	12 19	24
25	F	Conv. St. P. Pas. Royal Married,	42.2	28.3	35.2	20	51 7	34 4	14 11	6 10	19	12 33	25
26	S	Narcissus floribundus. [1858.	41.7	30.5	36.1	19	50 7	36 4	morn.	31 10	20	12 47	26
27	Sun	3 Sunday after Epiphany.	41.6	28.7	35.2	18	49 7	37 4	19 0	57 10	☾	12 59	27
28	M	Scilla amœna.	45.4	30.5	37.9	20	47 7	39 4	22 1	26 11	22	13 11	28
29	Tu	Scilla bifolia.	45.4	31.2	38.3	17	46 7	41 4	22 2	58 11	23	13 22	29
30	W	Begonia manicata.	44.3	32.0	38.2	20	45 7	43 4	21 3	after.	24	13 32	30

From observations taken near London during the last forty years, the average day temperature of the week is 43.3°; and its night temperature 30.3°. The greatest heat was 57°, on the 29th, 1863; and the lowest cold 15°, on the 25th and 27th, 1855. The greatest fall of rain was 0.90 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

TURF SOIL.



FIND my recommendation of fresh turf soil, chopped and used at once, in the cultivation of Camellias and in the formation of Vine borders, has excited some surprise; yet to me it is astonishing that any one can doubt the superiority of fresh turf over that which has been kept a year or more.

Why is turf soil valuable? If only because it is fresh to the plant we wish to grow, any soil which has not grown a Vine or Camellia ought to be as good. If it owes its value entirely to the vegetable matter it contains, a mixture of leaf mould with any good garden soil ought to be as valuable. I contend that turf soil is not only fresh—that is, unexhausted of the food required by the plant we wish to cultivate, but that its value greatly depends on the mechanical division of the soil by the fibrous vegetable matter it contains.

If this view be correct, why should turf be kept till the fibre is almost decayed before it is used? The time the soil will remain open and elastic must be reduced. If turf an inch thick be cut from a rich pasture of light loamy soil can it require sweetening, as it is called, before it is fit for use?

What idea does this term sweetening convey? I suppose the exposing any unoxidised matters to the action of the oxygen of the air. Is this very well carried out by stacking the turf in large heaps, as is generally done? Nay, can such unoxidised matters be found in turf soil? I have reason to think that in a rich pasture every particle of soil for several inches in depth has been swallowed by earthworms, and cast in its turn on the surface of the field. If this were not the case it would, I think, be impossible to account for the following facts.

Turfcutters often find at various depths layers of lime, ashes, &c., with which the field has been manured years before. These substances have disappeared from the surface, and are found in horizontal layers deep in proportion to the time which has elapsed since they were spread upon the surface. However many stones may be found in the subsoil of an old and rich pasture, few will be found near the surface; they have sunk, and are always sinking, whilst worms bring particles of soil from below them to be cast on the surface. What more perfect exposure to the action of oxygen could be secured than is insured by this process?

It may be objected that some grass fields have plenty of stones near or on the surface. Yes, because they are too poor to breed earthworms in any quantity. Soil or turf from such fields will be of little value.

Some years since I wrote an account in "our Journal" of a successful experiment which suggested itself to Mr. Jefferson, a clever Yorkshireman, head gardener to — Garside, Esq., of Worksop. Litter just as it came from the stable (a mixture of straw and fresh horse-manure), was passed through a chopper and cut into chaff. This chaff mixed with good garden soil grew Pines, young Vines in pots, and many other things, of which any man might be proud. Mechanical division of the soil was here secured by the fresh undecomposed straw.

In conclusion, I may say that I do not believe any mixture of soils will grow Camellias as strongly or as healthily as turf from a light sandy loam cut thin, chopped, or, which is far better, pulled to pieces, and used at once.—J. R. Pearson, *Chilwell*.

WALK-EDGINGS FOR VILLA GARDENS.

I was lately asked by a gentleman, the proprietor of a rather well-kept villa garden, what he ought to do with his Box-edgings, as twice within half-a-dozen years he had nearly renewed them throughout their length, and they were again in a very forward state for a repetition of that process. On going to see them I found they were indeed anything but lines of beauty; yellow and sickly, made up of two or three different varieties of Box, none of which seemed to be enjoying themselves very much, full of blanks, they were for the most part edgings only in imagination, and before long I fear they will not be even that. When asked what sort of soil was most suitable for Box, with some confusion I had to confess I did not know.

This villa garden is a rather light loam, with a gravelly bottom, and grows most plants beautifully. Roses flourish there with only a very indifferent supply of manure, but Box it will not grow; yet on some soils, which to my unchemical eye seemed exact counterparts of this, I have seen it so luxuriant that it was almost impossible for man and shears to keep it down. Not being able to doctor the old, I advised the gentleman to adopt a new edging altogether; and though Box is undoubtedly by far the best live edging we have, yet there are many substitutes not altogether unworthy our consideration.

First in the list, although, perhaps, not first in order of merit, stands the common Furze (Ulex europæus). Possessing as it does in no mean degree so many of the good qualities of Box, I am surprised it is not oftener used; it dresses well, the seed is cheap, and hardly any place seems too poor or dry for it. By sowing the seed where the edging is wanted, and when up by using the shears a little more frequently than we do with Box, it may be made to assume a really neat and respectable appearance. Of course it cannot well be kept below the fashionable height of 3 inches, but I have seen it dense and close at 5 or 6.

The small-leaved Periwinkle (Vinca minor), does very well if kept from straggling by pegging and clipping, and the fine fresh green of its foliage is a great recommendation. It succeeds under shade and drip better than any shrubby edging we have.

The Herbaceous Heath (Erica herbacea). This, with

some of its relatives, is often used, though it has not much to recommend it, being difficult to keep in order, and plants here and there often die out, making unsightly blanks in what ought to be, whatever it be composed of, one unbroken line.

Of the host of herbaceous plants used, comparatively few are well adapted for the purpose. Most of them make a broader line than good taste can sanction or economy allow where narrow walks and narrower borders are the rule, as they too often are in the case of villa gardens, added to which many of them require relaying every year, and most of them every two years, to keep them at all within the bounds of respectability.

One of the least objectionable in the above respect is that pretty little plant the Gentianella (Gentiana acaulis). It is most at home in wet damp places, where it will go on year after year throwing up its great Gloxinia-like tubes without being lifted or receiving any attention beyond a slight docking with the spade and line every spring when done flowering.

Several of the Sedums answer very well, but the flowers require to be clipped off before the seeds ripen, as they spoil the gravel with seedlings.

The Sea Pink (Armeria maritima), is so well known and so often used for hack edgings that I need only say it has many good qualities to recommend it, not the least of which is the facility with which any quantity of it can be procured, if within a reasonable distance of the sea.

The Auricula is also a great favourite in small gardens; so is the Arabis family, especially the variegated variety, but of it a reserve ought always to be kept to make up blanks, which will frequently occur.

Many of the Saxifrages make neat edgings, but require frequent re-arrangement.

There are many others that are largely used, of which not very much can be said in their favour. All the Daisies are highly objectionable on account of the trouble they give. The equally numerous family of Primulas are too large-leaved, and Mr. Wills's long-lost *protégé*, Viola cornuta, though I hear some are using it, is of far too genteel a nature to enter the lists against tacketty boot-toes and accidental barrow-wheels.

Perhaps on the whole the best substitute for Box will be found in dead materials. Of these, white dressed freestone takes the highest rank, and indeed in situations where weight and massiveness, or harmony with architectural surroundings, are desirable features this is indispensable. Unfortunately its costliness places it almost beyond the pale of common use; but a wooden kerb well painted with thickish paint, then neatly sanded, and, when dry, again coated with thin stone-coloured paint, if well done, looks remarkably like stone, and endures a long time.

Cast-iron edgings as usually made are also rather too expensive ever to become very popular, but as they will last any length of time, this expense is more apparent than real. As it is, a very neat and by no means insignificant-looking edging could be made for about 1*s.* per yard according to weight.

With regard to terra cotta edgings I have not had the advantage of seeing many that have been laid down for any considerable period; what I have seen struck me as being what we would call little more than half-hardy, a great many little corners and edges being scaled off by the frost, particularly about the joints. They look well, however, and as my opinion of their endurance must be taken in connection with a Scotch winter, they may, perhaps, do very well in England.

I was once acquainted with an old, retired, sea captain, who, after carrying Her Majesty's mails for many years to somewhere round the Cape, settled down in a snug little villa not far from the seaside, as most old sailors do, and took to gardening. His tastes certainly might not be of the purest, nor his theories, of which he had a great many, the most correct; but his shell walks were the whitest and his edgings the neatest in all that locality, and they were neither more nor less than old ship cables of about 2 inches in diameter. The way they were put down was this:—The ground being marked off, short stout stakes were driven in to a little below the level of the walk; along the tops of these common paling rails were nailed to serve as a bed for the cable, to which it was fixed by stout nails, and when the gravel was raked in the woodwork was entirely hidden. Than this, for a simple, not very expensive edging, nothing could be more artistic.

All up and down our shores, but more particularly on the south and west coasts of England, there are to be met with whole acres of rocks and boulders all bored over with little holes as if millions of fairy wimbles had been busy at work ever since the creation. This is the handiwork of several species of burrowing molluscs, known to those skilled in marine lore as Pholades, Saxicavæ, &c., and the means they use in making and the ends for which they make these countless holes in the hardest rocks have long been a puzzle among scientific men. Be that as it may, these molluscs manufacture one of the best materials for making rustic edgings that I know of. Broken up into pieces of nearly uniform size, and either laid on the ground or fixed on a foundation of brick by means of cement, it has a more unique and coralline appearance than anything else of the kind obtainable in this country. It is most suitable for walks in or about rockeries, ferneries, &c. Even for making rockeries themselves, if such caricatures there must be, it is much better than ordinary cobbles, tree roots, bottlework, clinkers, and all the other conventional abominations which when tumbled together are dignified by that name.—Ayrshire Gardener.

[Oblige us by sending your name and address.—Eds.]

GARSTON VINEYARD.

(*Continued from Vol. XI., page* 404.)

I have the more pleasure in resuming my description of the Garston Vineyard, because it will enable me to prove to "Vitis" and other readers that I only stated the truth in my article on making Vine borders. What "Vitis" says may be correct in reference to the ridge running through Hertfordshire, Essex, and Cambridgeshire, and which is composed of a calcareous sandy loam, a soil in which the Vine luxuriates without borders or anything except water. Give the Vine plenty of water in the above localities, and a moderate amount of horticultural skill is all that is necessary to grow good Grapes; but confine the roots of the Vine within the walls of vineries in borders only 3 feet deep, follow the practice which has pleased "Vitis" so much—namely, watering only once a-month, and I think "Vitis," or any one else would look in vain for good results. In Lancashire both climate and soil are adverse to the Grape-grower, and "Vitis" will therefore perceive that it is wrong to dogmatise on any subject, no matter what, when conditions differ.

Some years ago, long before Mr. Miller was heard of as a Grape-grower, there was a Mr. Nash at Bishop Stortford, who surprised everybody with his fine Grapes; but there was no merit due to Mr. Nash or his gardener—the soil was there ready, and they could not help growing good Grapes. The one want above all others to be attended to in the sandy soil of Bishop Stortford is water. The Vines will require it weekly, or oftener, during their season of growth. The great merit is in producing results under unfavourable conditions. This Mr. Meredith has done. He has not only had to contend with climate, but with the constant outlay which his undertakings involved.

Nine years ago last March Mr. Meredith began carting bricks to what was then a green field. One of his first proceedings was to build a good substantial dwelling-house, which is very commodious and pleasantly situated; most of the rooms upstairs and down are nicely heated with hot water. During the first year Mr. Meredith built his dwelling-house, four vineries, and four Pine-stoves, besides several other smaller houses and pits for plants. From three of these houses he has cut his most extraordinary Grapes. These results will at once show that when he made the borders nearly ten years ago, he clearly saw that to make a shallow border for permanent Vines on a cold lazy subsoil was useless. He was also well aware that to insure success it was necessary that a border should be made both outside and in. He had likewise a settled conviction that it was necessary, though expensive, to make a good lasting Vine border; if he had not done so he would have been under the necessity of replacing the splendid Vines that have borne such enormous crops of good Grapes, and which still give promise of greater results in future years, with others which, as soon as they were arriving at the proper age and strength for bearing good crops, it would have been necessary either to have lifted whilst another border was being made for them, or to have replaced with fresh Vines. In either case there must have been a break of a year at least before any favourable results could have been obtained.

The front of Mr. Meredith's dwelling-house faces due south. On each side of the house there is a lean-to vinery, 55 feet by 17. The healthy Vines, and the magnificent Grapes which these houses produce every year, abundantly prove that aspect has nothing to do with the well-being of the Vine. One of

these houses, No. 1, which I shall first describe, is on the west side of Mr. Meredith's dwelling. Not a gleam of sunshine ever falls on this house earlier than 2 P.M.; and as the house is principally devoted to late Black Hamburgh, Alicante, and West's St. Peter's Grapes, these being kept back as much as possible till late in the spring, we may safely assume that very little sun ever shines on the house during the most critical period of the crop, which I consider to be from the time the berries commence stoning till they change colour. The Vines in this house, as in most of the others, are planted inside, and about 2 feet apart. The front rests on pillars. The border is raised to within about 2 feet of the glass in front. There are no front lights, but there are some ventilators 2 feet by 10 inches along the front wall; and the border, both outside and inside, is built up above these, leaving merely a square hole outside, the size of the ventilator. Through these openings the air is admitted to the house. The border outside is about 12 feet wide, that on the inside about 5 feet, and it is intended to add another piece.

I cannot too forcibly remind those who contemplate making Vine borders that one of the most important precautions to insure success is making the border by degrees. I would make a section of the border complete, and plant the Vines in their proper position the first year, then add a yard or so to the border outside, and thus proceed every year till the full width had been attained. By these means the roots would take firm hold of the border as the Vines grew in strength; and at the end of three years the roots would occupy every inch of the border, and would have thoroughly established themselves, and be in a condition to produce splendid crops of fruit. At the time of my visit (October), the Vines in this house were clothed with abundance of fruit and foliage, not a yellow leaf was to be seen; and the Grapes, though not ripe, were as black as Sloes. Here were to be seen splendid bunches of Black Hamburgh, Black Alicante, and West's St. Peter's.

On this side of the dwelling-house is situated the dining-room, and from it a glass door opens into the vinery. The effect when sitting in the room is very pleasing. The green and healthy foliage, and the clusters of jet black Grapes, are seen to great advantage by the subdued light. The Vines were planted in August, 1857, and were then young plants in a growing state.

After leaving this house we pass round the north side of the dwelling. Here are two small lean-to's filled with greenhouse plants; the small squares of thin glass which cover the roofs and ends remind one of the time when horticulture in general and Grape-growing in particular were in their infancy. Passing through these houses we arrive at the east side of the dwelling, where we enter No. 2, or what Mr. Meredith calls the east house. It is of the same dimensions as the west house, and is filled with Black Hamburgh Vines, from which have been cut the marvellous bunches that have astonished every one at the metropolitan and other shows for the last four or five years. The Vines were planted in June, 1857. The house is built and the borders made just in the same way as in the case of No. 1.

From this house was cut the bunch of Black Hamburgh weighing 6 lb. 5½ ozs., exhibited by Mr. Meredith at the Edinburgh International Fruit and Flower Show last September twelvemonth. Will "Vitis" ever cut a bunch like this from any Vine grown in his shallow inside border? At the last Edinburgh Show another bunch, cut from the same house, and weighing 6 lbs., was exhibited. There are twenty-six Vines in the house; the number of bunches borne by each every year will average eight, and their mean weight will be about 3½ lbs. The Vines from which the large bunches were cut had four and five bunches on at the same time. The length of the canes in this house is about 12 feet. This shows the fallacy of the report that has been spread abroad by persons who have not seen the Garston Vineyard—that Mr. Meredith only grows one bunch on a Vine for exhibition purposes. He told me he once tried the one-bunch system, but that it proved a complete failure; and the particulars about it are, as nearly as I can recollect, as follow: Noticing on one or two occasions some extraordinary shows on some of his strongest Vines, he was induced to leave only the one bunch, thinking he would cause the Vine to throw its whole energy into that bunch, and by these means he fancied the berries would be swelled out to an enormous size. The laterals were duly pinched out, and the Vine treated just like the others growing in the same house. The result was that the bunch shanked and the berries refused to colour, whilst all the other Vines in the house produced a large and well-finished crop of fruit; and such single bunches were the only ones that shanked, or that did not colour. The result was nothing more than one might expect, if we take into consideration the strength of a Vine in the most luxuriant health, with all its energies concentrated on one bunch. Had there been four or five more bunches left on the Vine, or only two besides the selected bunch, it is probable it might have realised Mr. Meredith's expectations; as it was, the strength of the Vine was absorbed by the foliage instead of by the single bunch.

The sun leaves the house to which I am referring about 1 P.M., and when we take into consideration the wet and sunless season of 1866, it seems almost impossible that such splendid results in Grape-growing could have been obtained from houses whose aspect in both cases, one would think, is so at variance with the law laid down by gardeners up to a very late period—namely, that the aspect for a vinery must be due south. These houses and another facing the north, which I shall describe in the course of my ramble through the Garston Vineyard, will abundantly prove that any aspect will suit the Vine, and that a large amount of light is not absolutely necessary to give Grapes a good colour and fine finish.

Here, then, is comfort for the amateur and those whose sites for vineries offering a southern aspect are few in number and very much limited as regards extent; for they may have their vineries in any back yard, provided it is not too much hemmed in with other buildings and not shaded by trees, if they will make their borders according to the instructions I have given, and treat their Vines liberally; but on no account must they follow up the once-a-month system of watering, recommended with such confidence by "Vitis."

I was astonished to see no covering of any sort on the outside borders. I was more astonished when Mr. Meredith told me there had been no covering of any kind on the borders throughout the summer, and that the Vines had absorbed their share of the enormous quantity of rain that had fallen in 1866. What shall we say after this, about confining our Vines to inside borders, and subjecting them to the severe ordeal recommended by "Vitis?"

And now a word about the expensive style of Vine-border-making that "Vitis" so sternly condemns. Supposing the material and labour for making the border of the vinery above described to have cost Mr. Meredith £50 ten years ago, let us see what the produce of the house has been for the last six years. I have stated that there are twenty-six Vines in the house, that the average quantity of bunches produced by each Vine was eight, and that the mean weight of the bunches was 3½ lbs. I think that the average price per pound for the quality of Grapes would be 5*s.* at the season they are ripe, which is from July to September: we find, then, that the twenty-six Vines would produce in six years 4,368 lbs. weight of Grapes, and that the commercial value at 5*s.* per lb. would be £1,092. I have no authority from Mr. Meredith for quoting the above figures, I only do so to show that it is worth while, even in a commercial point of view, to make a Vine border thoroughly, and that it is better to allow Vines to properly establish themselves before fruiting. "H. S.," near Staines, would do well to take a hint from this, and not be in a hurry for the half ton of Grapes, but wait a reasonable time before he expects such a large return for the small outlay. The Vines in the house I have just been describing are in perfect health and vigour, and there is no doubt if Mr. Meredith is spared to superintend their management, that they will present the same appearance in twenty years' time. Of course every year they will want a larger amount of food in the shape of liquid manure, with annual surface-dressings of bones. The Vines are pruned back to the last eye at the base of the shoot every year. It would do a Vine-grower's heart good to see the condition the Vines are in, and if he minutely inspected them he would see large numbers of dormant eyes starting near the base of each shoot.

In describing what I saw at Mr. Meredith's vineyard, I cannot help making comments as I proceed. If, however, I may be thought wrong in any of the ideas I may have formed, I am at all times open to correction, and shall always feel grateful for any information that any of the correspondents of The Journal of Horticulture may be disposed to give in an open and friendly manner

The houses numbered 3, 4, 5, and 6 are all span-roofed, and are in a line with the house last described. They are used in the early part of the summer and spring for growing on young Vines. They are now filled with a fine, healthy stock of Indian

Azaleas and a miscellaneous collection of greenhouse plants, for Mr. Meredith having two very intelligent sons, who have just finished their education, it is his intention to commence a general nursery business, which will make his establishment more interesting to visitors. There are two fine pieces of ground right and left of his dwelling-house, and facing the road, on which he intends to build some magnificent houses for plants.—J. Wills.

(To be continued.)

COLLECTING AND STORING ICE.

I mentioned (page 30), my intention to throw water over a pond that had half an inch of ice upon it, too weak to stand the ice-hook, and which I feared would not become much thicker even by sharp frost, as there was a depth of fully 3 inches of loose snow on the ice. The plan answered so well that I would not hesitate to resort to it again whenever there was danger of the frost not continuing. The water was thrown with jets, so as partly to melt and partly to go underneath the snow on more than one-half of the pond, as we could not make it reach towards the centre. On the next morning on all the part so watered we had a fine plane of thick ice, but of two distinct properties as respects density, the ice formed first, before the snow, being much harder than that formed above it from the melted snow, though when welded together the freezing went right downwards as usual. All the part so watered came out in large pieces; but when, towards evening, we came to the unwatered part we could make but little of it, the partly congealed snow on the top slipping off the ice, as we were obliged to draw it towards us.

It is not always that such a chance can be obtained; but the blocks of ice, although causing extra work, even when moderately broken, to place in the ice-house, packed more firmly there than could have been done if the ice had all been of uniform hardness, unless well broken.

When the space to be filled is small, much will depend on firmly pounding the ice after breaking it well; but when the capacity of the ice-house is large, and the weather uncertain, I would prefer a large quantity of ice imperfectly broken to a smaller portion however well pounded. I have often proved that fifty loads housed somewhat roughly will keep longer than forty loads well pounded. In fact, provided there is enough small and pounded ice in which to pack the larger pieces, the ice will keep nearly as well as if all were pounded small. The great point is to prevent air circulating through the mass, and a large heap will soon become compact even from its own weight. I may here mention that for many years I have used neither salt nor straw about or over the ice, merely packing the doorway with straw.

In general our old-fashioned ice-house does not need air-giving, except when it is opened for use; but there are a few occasions when, if the surface were covered with dry straw, it would be the better of a small air-pipe from the roof. The low state of the barometer outside, and especially before, during, and immediately after a thunderstorm, seems to have an effect on the atmosphere of a close, shut-in ice-house, very much similar to that which it is said to have on the atmosphere of a deep coal pit. I have frequently noticed that in a fine day in summer, with the barometer approaching 30 inches, the air of the ice-house would feel comfortable and dry, and the surface of the ice be comparatively dry; whilst in an equally fine, sunny day, but with the barometer falling to 29 inches, and with signs of an approaching electrical disturbance, the opening of the ice-well would often be attended with an outpour of visible vapour. Now, it would be better in every way if this vapour escaped as formed, instead of surrounding and hanging over the ice; and such are the cases in which I think it would be better that the ice should be covered with a dry, non-conducting material, as straw, and that there should be an air-vent by a small pipe.

I have during the season had several communications as to the success and the non-success of ice-heaps from dairy farmers and others, with whom ice is becoming every season more a matter of importance. I think that when the heap has proved more or less of a failure, this result has been chiefly caused by the smallness of the heap and the insufficiency of the covering. In this respect it should not be forgotten that, other things being equal, the keeping of the ice will not depend on an arithmetical progression as to the size of the heap. Thus, a heap of a dozen loads will not keep half the time that a heap of twenty-four loads will do; nor yet will a heap of twenty-five loads keep half the time that a heap of fifty loads would do. In fact, for all practical purposes, it is scarcely worth while making a heap if it will not contain forty or fifty cartloads—that is, before the ice is broken. The larger the heap the more compact it is—that is, the fewer superficial feet exposed the better proportionally will the ice keep; and these advantages are, perhaps, best secured by a round blunt cone, though a long blunt ridge, like a flat span-roof, answers very well. In neither case should the base be less than from 12 to 16 feet, and the height should not be less, if possible, than 7 or 8 feet. I have known cases of a dozen loads of ice being so emptied down rather roughly, and some cartloads of straw piled over the heap, and yet the ice came out serviceable in July; but there would be a better chance if more ice had thus been collected and the work had been done more systematically, though it is sometimes wonderful how long ice will keep when heaped in this rough way.

Some inquirers are puzzled because they cannot find such favourable places for forming a heap as I and others have described. In this there need be no difficulty. If the ground is quite level a small trench will have to be made, a yard or 4 feet from the heap, and that, too, will have to be covered with straw to prevent the heat acting on the trench. It is rare, however, that a little mound, 6 or more inches higher than the general ground round it, cannot be found; and in such a place there will be no necessity for a trench or anything of the kind, as, if the ice be placed on a few inches of brushwood, any little melting that takes place will find its way to the lower ground imperceptibly. No better chance for forming such heaps could be found, where water is near, than a frosty time when the ground is covered with snow, especially if the heap is to be formed in the corner of a meadow, as not only could large blocks be built in the sides of the heap, but a considerable portion of the surrounding snow could be brought up with the ice; and a good watering over all, and the ice exposed to the severe frost, would make the whole heap like a solid block of ice.

No class of men could form these heaps more economically than farmers, as the straw covering would cost them little or nothing, for it would always come in for use when it had served its purpose over the ice-heap. The straw must be dry when used, and ultimately, when rough-thatched to throw off all wet, it should not be less than 3 feet thick, though I have seen good heaps with not much more than 2 feet of covering. A hole will have to be carefully taken out when ice is wanted, and it would be well to have small bundles of straw to fill in the hole, and an old door over all outside. The straw covering should extend a few feet on the ground round the heap, the farther the better, to prevent the ground becoming heated near the heap, for though earth is a slow conductor of heat, it does conduct, and the farther the straw extends the greater will be the safety of the heap in this respect. From want of this consideration I have known heaps that melted prematurely, not from the heat finding its way through the thatching or covering, but from rising through the ground beneath.

Two more observations will make all clear. Unless you make something like a regular house above ground, be satisfied with covering the ice and laying the straw close on it without any intervening frame, so that as the ice shrinks the cover will sink with it and leave no space for air. Make sure that the covering will not produce heat by decomposition; it must, therefore, be dry. Lastly, avoid everything like holes in the covering, whether by birds, rabbits, or rats, as all these holes will merely be ventilators to let the warm air in. A series of tar strings round the heap will help; a fence of fine wire netting would answer admirably.

My apology for these remarks is the hope that ice-heaps will be more general, not only in dairy farms, but that they will also be considered essential adjuncts to all hospitals and infirmaries, where ice from other sources cannot be easily or quickly obtained.—R. Fish.

PASSIFLORA LAURIFOLIA SELF-FERTILISING.

In the last volume, page 348, your correspondent "A. B." writes on the cultivation of Passiflora laurifolia, or Water Lemon. I perfectly coincide in his remarks on the cultivation, but he is in error about its impregnation, as I know by long experience that it is fertilised by the pollen of its own flowers. I have grown upwards of two hundred fruits annually on one plant, all of which were fertilised by its own pollen. I consider

it advisable to name this, as some might be deterred from cultivating Passiflora laurifolia if they were obliged to grow other kinds for the pollen.— J. Jones, *Gardener, Boothby House, near Lincoln.*

THE INTENSE COLD AND ITS CONSEQUENCES.

Nenagh, Ireland.—On the night of the 2nd, the thermometer registered 1° below zero, and on the 3rd it again fell to zero. Such a degree of cold has never, I believe, been heard of in Ireland, even within the memory of our venerable friend, "the oldest inhabitant." My thermometer was pronounced incorrect, as "that was a degree of Canadian cold never experienced in England or Ireland." This I was slow to believe, as the instrument was procured from a well-known maker. The fact was, that I put it on a stand about 1 foot from the ground, out on the grass away from all shelter, thereby testing the real temperature more accurately than some of my disbelieving friends, whose thermometers were hung on a wall outside their windows. From what I have read in "the Journal," and daily papers since then, I think I may feel certain that my thermometer is correct. As to the effects on vegetation in my own garden, as far as they are yet apparent, almost all the vegetables, including a fine crop of early Broccoli, Savoy and other Cabbages, in different stages, are either destroyed or severely injured; and the damage done in frames which were thought to have been securely protected, is too melancholy to record.—C.

Barrow-on-Humber, Lincolnshire.—The temperature as taken here by a Negretti & Zambra's thermometer, suspended in an exposed quarter of the kitchen garden, the aspect, north, was as follows:—

	Lowest Temperature.		Lowest Temperature.
January 1st.....	20°	January 5th	12°
„ 2nd	12°	„ 12th	20°
„ 3rd	22°	„ 15th	20°
„ 4th	16°		

Evergreens do not seem to have suffered here at present (13th). It has not been so cold here by 12° as it was on Christmas morning six years ago. The thermometer then fell to 32° below freezing. Aucuba, common Laurel, Portugal Laurel, Bays, Cedrus deodara, and Araucaria imbricata were then killed down to the snow-line.—The Gardener, *Grove House.*

Wickham Market, Suffolk.—On the 14th, the thermometer was down to 9°, being 23° below freezing.

Cambridge.—At Gonville Nurseries the lowest temperatures occurred on the 2nd and 4th, when the thermometer fell to 8°. —J. J. Chater.

Winchester.—Near the Cathedral, on the 4th, the thermometer fell to 4°.—J. Newberry.

Oakham, Rutland.—The lowest temperature registered here, occurred on the night of the 4th, when it was 9°.—G. B., *Barley Thorpe Gardens.*

Hanworth, Norfolk.—During the night of the 4th inst., the thermometer, on a north wall, 4 feet from the ground, fell to 10°.—E. Sendall, *Barningham.*

Laverstoke House, Hants.—One of Negretti & Zambra's registering thermometers hanging in an open situation on a wall in the garden, about 2 feet 6 inches from the ground, indicated on the morning of the 4th inst., 31° of frost, or 1° above zero; and on the 5th, 26° of frost, or 6° above zero. Much damage seems to be done to the shrubs. Laurels are very much scorched. Of Laurustinus the tops have been killed down to the snow-line; Arbutus and Garrya the same. Of the hitherto-considered hardy Brussels Sprouts and Sprouting Broccoli, about one-third has been very much injured, if not killed. The other sorts of Broccoli appear all right, owing, no doubt, to their being laid close to the ground, consequently they were better covered with snow. I was very much surprised at your registered temperatures being so much lower than ours, as usually we do not vary more than 2°. We are on a cold part of the Hampshire Downs.—John Alliston, *The Gardens.*

Liverpool.—The lowest temperature on the night of the 4th was 12°, or 20° below freezing point, with a dense fog. The thermometer was self-registering, 3 feet from the ground, and in an open situation. The height here above the sea level is 147 feet.—W. Biggs, *Sandfield Park.*

Brigg, Lincolnshire.—On Wednesday morning, the 2nd, my thermometers (Negretti & Zambra's), registered 3.5°, and on Saturday 7°—that is, of course, above zero. Several standard and dwarf Roses appear killed, as in 1860—namely, such kinds as Lord Clyde, King's Acre, Madame Vidot, Pierre Notting, and several others.—J. B., *Bracken Hill.*

Yorkshire.—"A correspondent informs us that the frost has killed two thousand of his standard Rose trees. One of Negretti and Zambra's thermometers registered on two evenings 5° below zero. The same amount of frost killed 1500 Rose trees in 1860. He says his Roses budded on the Manetti stock are safe, and alive for about 4 inches above the soil, the cover of snow having saved them. These will shoot up vigorously from below in the spring. He adds:—'No doubt you will hear of many other rosarians having their hopes blighted for the ensuing summer.'"—*Yorkshire Post.*

Armagh, Ireland.—During the past week we have been visited by one of the most severe frosts that have occurred in this locality for half a century, making sad havoc among vegetables and shrubs. The thermometer, one of Casella's registering, on the nights of the 2nd and 3rd was 1° below zero. Broccoli, Brussels Sprouts, Scotch Kale, and, in fact, everything that was not covered with snow, were totally destroyed. Roses, Laurustinus, and Bays were quite killed. Rhododendrons, Evergreen Oaks, common and Portugal Laurels were very much blackened, and there are numbers of other shrubs which I fear will never recover.—E. Welch, *Palace Gardens.*

Haddington, East Lothian.—As suggested by you at the close of the year, I had intended to note down and send to you the names and times of flowering of plants in my garden during this month. I noted that on the 29th December the Winter Aconite was in bloom and Snowdrops peeping through the ground; but on the 31st it began to snow, and on the 1st inst. an intense frost set in, and since then we have had four or five distinct falls of snow, with severe frost intervening. On the 1st the thermometer in my garden at 11 P.M. stood at 5°, on the 3rd at 9°. There was a short interval of thaw on the 8th, but since then snow and frost have succeeded each other. I have not been able to inspect my garden minutely, but I anticipate there will be more plants killed or injured by frost than in any season since 1860-61. I am afraid the Tea-scented Roses will be cut to the ground. Lonicera aureo-reticulata seems quite lifeless. It will be impossible to ascertain the extent of injury to fruit trees till spring has set in, but I am much afraid that the buds of my Almond trees have been destroyed, and am even doubtful of the Apricots. A fine quarter of Broccoli, which was producing beautiful heads daily before the storm, seems reduced to pulp. I look forward to see traces of great destruction when the storm abates.—John Ferme.

Hay, Herefordshire.—My thermometer (Negretti & Zambra's), which marked 7° on the night of January 3rd, the next night marked 3° higher—namely, 10°, and last Monday night (14th), it fell to 3½° above zero.—F. F., *Brook House.*

North Wales, Corwen.—We are much exposed to the north and north-east, lying low on a gravelly subsoil. The thermometer, hung against the house and facing S.E., registered 3° above zero on the 4th inst. Arbor Vitæ looks much cut up, but Portugal Laurels and Holly are not in the least damaged. Roses look much cut up. They are trained to a wooden fence facing south-east, and have some thick branches of Spruce Fir stuck in the ground in front of them, which I find answers better than anything I have tried. Duc de Rohan, much injured; Comtesse de Chabrillant, dead, I fear; Celine Forestier, nearly dead; Mrs. Bosanquet, nearly dead; Duchess of Norfolk, dead. Baronne de Heckeren, Lord Clyde, Madame Boutin, and Celine Forestier, as standards in the open ground, nearly dead. Roses doing well on a S.E. trellis—Gloire de Dijon, Admiral Nelson, Souvenir de la Reine d'Angleterre, Madame Domage, Souvenir de Leveson Gower, Monsieur de Montigny, John Hopper, La Reine, Mrs. Standish, Général Jacqueminot, General Washington, Madame Vidot. I have many more Rose trees, but could not take account of them, they being covered with snow.—T. Elcome, *Rhug Gardens.*

Bedale, Yorkshire.—The lowest temperature registered here was 5° below zero, or 37° of frost. On the evening of the 1st of January the ground was covered with 6 inches deep of snow, and with continual additions it has since remained at that depth. The frost has averaged 15° in the night and 4° during the day continually. It appears rather giving way this morning (19th), as the lowest temperature during the night was only 5° below freezing. Negretti & Zambra's thermometers are used. Common Laurels, Sweet Bays, and Laurustinuses are quite killed to the snow line, and many Roses appear killed and others much cut; Celine Forestier and Triomphe de Rennes are quite dead. I daresay many other plants are dead,

as will be seen when the snow is gone. During the Christmas of 1860, the thermometer registered 44° of frost here.—Henry May, *Hope Nurseries*.

Poynton, near Stockport.—I beg to enclose the readings of a self-registering thermometer, 4 feet from the ground, and in the shade :—

	Max.	Min.		Max.	Min.
January 5th.....	32°	.... 12°	January 13th.....	25½°	.... 13°
„ 6th.....	41°	.... 28°	„ 14th.....	22°	.... 10°
„ 7th.....	50°	.... 38°	„ 15th.....	28°	.... 10°
„ 8th.....	50°	.... 41½°	„ 16th.....	30½°	.... 23½°
„ 9th.....	45°	.... 37°	„ 17th.....	30½°	.... 20°
„ 10th.....	44°	.... 35°	„ 18th.....	31°	.... 14½°
„ 11th.....	36°	.... 28°	„ 19th.....	34°	.... 21°
„ 12th.....	28°	.... 18°			

—Filix-mas.

Killaloe, Co. Clare, Ireland.—The thermometer here is a self-registering one, and is placed about 5 feet from the ground, in a stand, such as was described some years ago in your Journal. The scale is, of course, Fahrenheit's. We generally suffer little here from hard frosts, and still less from snow, and the fall here this year has been trifling.

January 3rd	16°	January 16th	20°
„ 4th	20°	„ 17th	18°
„ 13th	22°	„ 18th	14°
„ 15th	16°		

The lowest temperatures previously registered were as follow: —1850, January 17th, 15½°; 1856, January 13th, 18°; 1859, December 20th, 18°—W. H. Mayne.

GARDENERS' EXAMINATION FOR HONOURS.

"A Subscriber" would be glad to know where he can find the rules and regulations for the examination of gardener lads, as he is of opinion that by encouraging the education of young gardeners an essential improvement would be effected in all branches of horticulture. His attention was called to the subject by the report of the "Gardeners' Examination for Honours" in this Journal. He would suggest that with these reports a list of the questions at the examination should be published (not the answers). The advantage of this to future candidates would be to give them a notion of the subjects on which they would have to prepare themselves for examination

[We do not think it would be beneficial if the Royal Horticultural Society were to publish the exact questions that are put in the examination papers of gardeners for honours, but there can be no objection to publishing a syllabus of the subjects upon which the examinations are founded. We have, therefore, inserted below that which is published by the Society of Arts, and which is for all purposes the same as that on which the examinations of the Royal Horticultural Society are based.

"Floriculture.—Improvement of races in plants, by what means it can be commenced and carried forward. Hybridisation, objects of. Conditions necessary to ensure fertility in flowers.

"Warming and ventilation of houses for plant culture. Influence of ventilation on plants confined in forcing-houses. Limits of temperature endurable by plants, and how to turn this to advantage in practical floriculture. Bottom heat, value of in plant culture.

"Watering, the *rationale* of, in the culture of pot plants. Liquid manures, special recommendations of. Food of plants, how and whence derived, and in what form received.

"Propagation, the various modes of, and their special adaptations. Vitality of seeds, duration of, and how best preserved. Budding, Grafting, and Inarching, how performed, and to what subjects best adapted. Increase by cuttings and by layers. Leaf-cuttings, how is it that they can organise buds? Composts for various classes of plants.

"Acclimatisation. Is it possible to increase the hardiness of any race of plants, and what are the most likely means?

"The leading flowers of the different seasons, indicating those to be obtained naturally, and those by artificial means.

"Special Culture—Ferns, Orchids, Succulents, Heaths, Hardy Annuals, Bedding Plants.

"Text Books:—'Lindley's Theory and Practice of Horticulture' (Longmans). 'M'Intosh's Book of the Garden' (Blackwood & Sons). 'Thompson's Gardener's Assistant' (Blackie & Son).

"The Examiner, in his remarks on the work done by the candidates on the last occasion, says they 'fail most especially, as a rule, in conveying clearly and concisely the purport of their own replies, and lose force of expression by multiplying words. They are strongly recommended, as a part of their studies, to practise the writing out of short pithy remarks on each of the subjects set down in the programme, comparing their own remarks with the statements in the text books, and repeating this from time to time, cutting out all superfluous words, so that they may get the essential particulars well impressed on the memory.'

"Fruit-tree Culture.—Kinds of fruits adapted for various soils and exposures. The Propagation, Pruning, and Training of Fruit Trees. The Structure and Functions of the Organs of Trees, considered in their relation to growth and reproduction. The Forcing of Fruit Trees, and their cultivation under glass, both in and out of pots. The Theory of Ripening, and the principles that ought to regulate the preservation of fruits after they are ripe, or their subsequent maturation. The Packing of Fruit for transmission to great distances.

"Vegetable Culture.—The kinds and quantities of vegetable seeds and roots required for cropping gardens of given dimensions. The most approved mode of culture of the different kinds of vegetables and salads. The preparation of fermenting materials for artificial heating. The forcing of vegetables and salads.

"*General Subjects.*—Soils, Water, Atmospheric Air, Light, and Heat in their relation to the successful cultivation of fruit and vegetables. Manures and their application. The Diseases and Insects to which fruit trees and vegetables are subject, and their remedies. The erection, heating, and ventilation of garden structures.

"Text Books:—'Lindley's Theory and Practice of Horticulture' (Longmans). 'The Cottage Gardener's Dictionary' (Bell & Daldy). Hogg's 'Fruit Manual,' Third Edition (171, Fleet Street). Rivers's 'Miniature Fruit Garden' (Longmans). Bréhaut's 'Modern Peach Pruner' (171, Fleet Street).

"The Examiner, in his remarks on the papers worked on the last occasion, says:—'I am pleased to see the rising generation of gardeners devoting themselves to a study of the theory of gardening—to a study of those principles which ought to regulate every gardening operation, and without a perfect knowledge of which there can be no perfect practice. Practice without a knowledge of the principles by which it is governed is an insecure and baseless foundation on which to rest when natural conditions are disturbed or unexpected difficulties arise. I therefore urge on gardeners most strongly the necessity of studying the principles which regulate vegetation; but at the same time I desire also to see the fruits of that study exemplified in the practice, for a knowledge of the theory without the practice is worthless.'"]

ROYAL HORTICULTURAL SOCIETY.

January 15th.

Floral Committee.—There was a large attendance of the members of the Committee, but nothing for them to do. A single plant, from Mr. Howes, Seven Sisters Road, of a variegated Primula, was the only specimen sent. This was not worthy of notice, several plants of the same character having been known. The Committee seemed to be of one mind in lamenting the great losses many of them had sustained from the severe weather, the Roses and some of the Conifers having been entirely killed. The subject of the tobacco duty was again discussed, and as soon as Parliament meets some steps will be taken to obtain tobacco for fumigating plants at a low rate and on the same terms as that used for washing sheep and the Hop plant, when infested with vermin.

Fruit Committee.—Mr. Whiting, gardener to Mrs. Hope, The Deepdene, near Dorking, contributed nine sorts of Apples, for which he received a special certificate. Messrs. Slater & Sons, Malton, likewise sent a number of Apples, chiefly for the determination of the names; and from W. Wentworth Buller, Esq., Strete Raleigh, came several dishes of Court of Wick, intended, we believe, for distribution among the members attending the meeting. The only other subject worthy of notice was a bunch of Mrs. Pince's Black Muscat Grape, exhibited by Messrs. Lucombe, Pince, & Co., of Exeter, to show the extraordinary length of time for which it may be preserved. With reference to this property, as well as to the merits of the variety generally, remarks have already appeared at page 11.

General Meeting.—G. F. Wilson, Esq., F.R.S., in the chair. The business was entirely of a formal character. Sixteen new Fellows were elected, and the St. Ann's (Nottingham) Amateur Floral and Horticultural Society was admitted into union. On the table were placed a few subjects, not referred to as being brought before the Floral Committee. These were:—a variety of Sophronitis grandiflora called Alexandrina, and having purplish crimson flowers, from Messrs. E. G. Henderson; cut spikes of Barkeria Skinneri and a Lælia, from Mr. Hodges, gardener to E. Wright, Esq., Gravelly Hill, Birmingham; Zonale Pelargonium Minas, a promising variety, which received a second-class certificate last September, from Mr. Mann, of Brentwood; and from Messrs. Backhouse, of York, cut spikes of an Oncidium allied to O. serratum, with brownish green flowers having a small lip, and Brassavola cuspidata.

FINE CONIFERS.

I send the dimensions of seven trees of Wellingtonia gigantea, which are in the pinetum here. No 1 is 23 feet 4 inches high; its circumference of stem is 6 feet 2 inches, and it measures 18 feet 4 inches through the branches. No. 2 is 20 feet 6 inches in height; No. 3, 17 feet in height; No. 4,

17 feet in height; No. 5, 16 feet in height; No. 6, 16 feet 7 inches in height; and No. 7, a cutting from No. 1, 14 feet 4 inches high.

We have also some very fine specimens of Picea nobilis, Nordmanniana, and pinsapo, and of Pinus austriaca, strobus, and excelsa. Some trees of Pinus insignis are between 30 and 40 feet high. Abies Albertiana and A. Douglasii are about 30 feet high; and Brunoniana, alba, morinda, and Menziesii are about 40 feet in height.—H. Hickman, *Gardener to R. E. Thomson, Esq., Kenfield, Kent.*

SOIL FOR CAMELLIAS.

Seeing your reply in last week's Journal to "Senex" as to the best soil for Camellias and Azaleas, in which you recommend turf cut 3 inches thick and stacked with a layer of cowdung an inch thick between each layer of turf, to be turned in six months, again in three months, and another three months to elapse before it is to be used, and all the rest of it so thoroughly disheartening to amateurs—allow me to say a word or two by way of cheering up "Senex," for I am sure he must feel greatly depressed at the prospect of losing his Camellias by having to wait twelve months for soil to repot them in.

Last March I purchased a lot of neglected plants from a neglected greenhouse, and among the rest a very sickly-looking Camellia in a deplorable state of filth and wretchedness. Being desirous of ascertaining the colour of the leaves, after a thorough washing with soap and water I found it to be a compromise between green and yellow. This result caused grave doubts as to the soundness of my bargain; but feeling assured that there was appropriate advice somewhere in "our Journal," I went in for a read-up, and I saw that excellent article by Mr. Pearson published in the number for the 27th of last February, and in which he says, "After many years' experience I have come to the conclusion that turf from a sandy loam is the only soil fit for Camellias, and that the addition of leaf mould, peat, manure, &c., is always injurious." He goes on to say, "Cut the turf as thin as if it were intended for a grass plot; chop it, or, what is better, pull it to pieces, and use it the same day it is cut. In using so fibrous a material considerable pressure must be employed in potting, otherwise it will be too loose."

After giving three cheers for Mr. Pearson, and three groans for men who would recommend one-year-old ——, but never mind, I set to work, turned out my Camellia, shook out the sour soil and dead roots, and repotted it—in what do you think?—why, in fresh-cut turf, pressed it firmly down, and I should like you to see the plant now, the picture of health; its flower-buds, of which I had to take off at least a dozen, swelling beautifully, and promising a glorious show. But I suppose you will not insert this.—T. L. C.

[You see that we have not only inserted your communication, but one from Mr. Pearson on the use of fresh turf. It is a step in the right direction, and though decomposed turf is excellent for Camellias, the Editors hope to have it established that fresh turf is as good for them. Editors have to recommend what they know is successful.]

EARLY PEAS AND POTATOES.

My garden is of light, porous soil, is well protected from the north and east winds, and thoroughly drained. Its slope is to the south and west. In this garden were sown on the same day Carter's First Early, Sangster's No. 1, and Daniel O'Rourke Peas. From what I had read of the first I expected to have a crop almost before Sangster's or Daniel O'Rourke had formed pods; but the lesson taught me was that the old friends were true friends, for Sangster's and the well-tried Daniel O'Rourke yeilded many dishee before the first-named; and when the lazy first did come, it was not worth waiting for. The Peas were all grown upon the same plot of ground; the rows all ran from north to south, and received precisely the same treatment. Elevation above the sea 260 feet, and distance from the coast nine miles.

About six months after I entered upon my parish work a worthy farmer came to visit my garden, and having examined my flowers and my vegetables, exclaimed—"Well, your Reverence, you can beat me in all but Potatoes." All but Potatoes! Well, do you know, I did not like that "but," and I resolved next year there should be no "but;" and none there was, for my good parishioner declared my Potatoes unequalled in size, quality, and quantity. The secret was, I planted whole sets of medium Potatoes, which I had started early. The Potato was Myatt's Ashleaf.

Last year the greater part of the Ashleaf Potatoes were waxy and diseased, the Scotch Cruffles were nearly as bad, and the Early Heroes were worse.

Having tried many plans of Potato culture I thoroughly agree with "D.," of Deal, and Mr. D. Thomson, as to the advantage of using whole sets. As an experiment I disbudded a few sets, leaving only one eye, and was rewarded by an earlier and larger yield. The ridge system I should condemn as strongly as your last correspondent, provided the soil is light and dry, but the case is quite altered if you have wet, heavy ground.

I will give you, some time, the results of this year's culture.—Ronnoc.

THE ROMAN HYACINTH.

I want to say a word in favour of a little bulb which I do not think meets with the attention that it ought, I mean the pretty little Roman Hyacinth, believing that in another season some of your readers who are situated as I am will be very glad to make further acquaintance with it.

I have no means of forcing plants, my object being, as far as greenhouse plants are concerned, to keep them safe from frost. Those who can force will, therefore, probably think little of a Hyacinth like this, which is so much inferior in size and beauty to the Dutch varieties; but to me it is a matter of no little pleasure to be able to have at Christmas a pot of Hyacinths in full bloom, distributing their fragrance through the room, and that without any extra trouble. By forcing they can be had, I know, in November, but I think they are not nearly so pretty when forced as when grown naturally. It is a mistake, too, to plant them too thinly; they should be placed with the bulbs almost touching one another. I put six into a 32-sized pot, and have had them now for some weeks in bloom in my sitting room, their little snowy bells standing well up above the dwarf, stiff, glaucous foliage, and diffusing a pleasant but not overpowering odour throughout the room. Doubtless if they came in in March and April along with the other bulbs, we would not think a great deal of them; it is the fact of their blooming when they do that really gives them their value, and it is because of this I recommend them to those who, like myself, are obliged to study what is economical as well as pretty.—D., *Deal.*

[We are well pleased that our correspondent has noticed this fragrant little flower. It is a very old tenant of our gardens, being introduced in 1596. Formerly it was called Hyacinthus romanus, but La Peyrouse has founded on it a new genus, and it is named Bellevalia operculata.]

ENTOMOLOGICAL SOCIETY'S MEETING.

The first meeting of the year was held on the 7th inst., Sir John Lubbock, F.R.S., the President, being in the chair. Amongst the donations received since the last meeting were the publications of the Natural History Society of Geneva, contributions on American Lepidoptera, and on the Zygænidæ of Cuba, by Messrs. Grote and Robinson; on Danish Coleoptera by M. Schiodte; and Dr. Gerstaecker's annual review of entomological publications. A new part of the "Society's Transactions," containing papers by Mr. F. Smith on Brazilian Hymenoptera, Mr. Trimen on the Butterflies of Mauritius, and Mr. McLachlan on new genera of Psocidæ, was announced as ready for distribution among the members.

A memoir by Captain Hutton was read on the Japanese Silkworm, allied to the common Chinese Bombyx mori, which had been much overrated, and which he believed was only a hybrid between a sickly degenerate race of the latter insect and the little B. sinensis; and he expressed his opinion that the only way to renovate the European stock of Silkworms now so much contaminated with muscadine, &c., was to depute experienced entomologists to visit China with a view to the rediscovery of the Silkworm in its natural state of freedom.*

Professor Westwood exhibited a large collection of Heliconiidæ and Pieridæ from the interior of Brazil, collected by the late Dr. Burchell, whose entire collections had been presented to the University Museum of Oxford. They were extremely valuable, not only from

* Captain Hutton cannot have been aware that at the last International Exhibition at Paris some Silkworms and silk of a beautiful texture were exhibited which had been recently imported from Japan, and which had been found quite free from all attacks of the muscadine fungus.

the rarity of many of the specimens, but also from the fact that the precise locality and date of capture of every individual was recorded, so as to show most satisfactorily the extent of the geographical range of every species and supposed local variety. With reference to the mimetic resemblance between animals inhabiting different localities, he cited the instance of the humming birds of the New World and the Humming-Bird Moth of Europe.

Mr. McLachlan asked for an explanation of the fact that the last-named insect is frequently to be observed in considerable numbers chasing up and down walls, banks, or cliffs, exposed to the hottest sun, and especially about stone walls near the sea, but no explanation was offered.

Mr. F. Smith stated that in consequence of this habit of the Humming-Bird Moth, a clay nest found upon a wall, over which the Moth had been seen hovering, had been sent to the British Museum, on the supposition that it was the nest of that species of Moth, but it was found to have been made by a Mason Bee.

Mr. A. E. Eaton mentioned that during the last season he had found the nest of the Hornet in an unusual position—namely, in a sand bank, where there was no wood near.

The following memoirs were read—Chorentidæ and Crambina collected in Egypt in 1864, and Crambina, Pterophorina, and Alucitina collected in Palestine in 1865 by the Rev. O. P. Cambridge, determined and the new species described by Professor Zeller, the German descriptions translated by H. T. Stainton, Esq; and a monograph on the genus Hestia, with a revision of the Danaidan Butterflies—namely, ninety species of Euplœa, seventy of Danais, and ten of Hestia, by Mr. A. G. Butler.

OUR VINES.

(*Concluded from page* 50.)

So we came to the autumn of another year, and the yellow leaves fell from the great Sycamore tree in the garden close by, and the Silver Birch threw its long shadows on the grassy lawn, and our fruit, yet untasted, hung ripe and ripening in the vinery. It seemed as if we had come to the very point, reached the end for which we had aimed and worked, as if our land of promise lay all before us ready to enter in and possess, as if the reward had come for all our care, and thought, and work, and study; not the reward of so much pleasure or enjoyment, or eating, or giving away to friends, which though last is not least; but that deeper, richer, better, more lasting reward, success to our efforts, the power expended coming back to us in a larger measure, giving us a sense of knowledge we could never more part from.

"You are not out of the wood yet, with all your shouting," said Cousin Walter, one Saturday afternoon in October, the day appointed for the first fruit-gathering, and our Vine doctor had promised to come over and help in the arduous work.

"What is the matter Walter?" said Cousin Herbert, "Why there is mould, and no mistake, upon these berries," and he was rubbing away with all his might at a bunch of Lady Downe's.

"Come up and see for yourself, Kate."

"It is not mould, it is the very bloom you are rubbing off," said Kate in great alarm, "Come down this minute."

"You do not mean to tell me this mealy whitey-blue stuff is bloom do you? why the very canes are covered with it."

"So they often are on Lady Downe's," said Kate.

"You are a jackanapes, Walter," said Uncle Tetley, "if I were you, I would not meddle with what I did not understand."

I do not think we should ever take a prize for Grapes, even if we were to try, and they were never so fine, said Uncle Tetley, we handle them so much."

"Well, you see they are our first," said Cousin Herbert, "and a great deal of pleasure lies in the touch; they are something like a first baby, much made of and tossed about. The idea of a Greek scholar rubbing the bloom away from his Grapes, thinking it mould. But if there is no mould, which I am not sure about, there are plenty of thrips on that Reeves' Muscadine, you can find them by hundreds, if not thousands."

"Never mind the thrips, said our Vine doctor, coming in just then, let the thrips die with the dying leaves. You can do nothing, you can neither syringe, nor smoke, so you must do as you say here in Yorkshire, 'bide your time.'"

"Well you may laugh," said Kate, "but I expect some morning we shall find the thrips has carried everything out to the lawn."

"Then I will help you to bring them in. Bless my life you have in comparison none, half the gardeners in England would swear they had not, if they had no more. I tell you what, Miss Kate, I would not like being your gardener, no not for a thousand a-year. Come now, what about those bunches, which are we to cut, and what are we to do with them?"

"Think of your friends to be sure," said Aunt Margaret, "no good will ever come of them if you are stingy."

"Well, I suppose," said Cousin Herbert, "the largest must go over the way to Mrs. Arthur Tetley's; or, perhaps, dear Aunt, you will not mind taking it with you; and, then, George must come in for a share, for after all his queerness, I have seen him give many a helping hand on the sly."

"And, then," said Kate, "Papa says Dr. Brown must have a bunch, for he does not grow them, and is very fond of them."

"And you would not forget our Rector," I said.

"No need to think of him," said Janet, "look at all the people in his congregation who have vineries, and, doubtless, will send. Why I dare say he has more than he can eat."

"And, then," said Cousin Walter, "there is lawyer Forden, he must have, or all the fat will be in the fire."

"And there is Walter's learned schoolmaster," said Uncle Tetley. "And, then, there are neighbour Cuthberts."

"No need to think of them," said Janet, "they are rich, and can afford to buy."

"I dare say all the people we have mentioned can do that," said Kate. "After all it is only an expression of kindly neighbourly feeling."

"It looks as if you thought such a deal about them, as if you had never had Grapes before, and were proud of them, and wanted to be thought clever."

"Well, we do think a great deal about them, Janet, we are very proud of them, and we have never had before of our own growing; and there is another thing, we are not ashamed of our feelings, nor of showing them. I wonder what they were given us for, if they are always to be hid away."

Then we had great work with our Grapes, cutting them down, bunch after bunch, some weighing more, some less than we thought. Cousin Walter held up our little rubbish-basket for their acceptance, but Cousin Herbert shook his head, saying, "Nay, nay, that will not do, we must have something better and cleaner." Then Aunt Margaret brought to light from some place where it had been hid, where we never could make out, a beautiful silver basket and Grape-scissors, saying in reply to our exclamations, "Oh, never mind where it came from, it is a present." If we have not a first-rate gardener, that is no reason we should not serve up our fruit in a decent, proper manner. Then in triumph we bore into the dining-room our silver basket heavy with its own worth, heavier still with its weight of Grapes, and we formed a jury, and sat in judgment on them round a blazing fire.

"These Black Hamburghs are very good," said Uncle Tetley.

"I think them splendid, would not desire better," said Papa.

"I like Reeves' Muscadine best," said Cousin Walter, bobbing one after another of the little round berries into his capacious mouth.

"I do not," said Mamma, "really, Herbert, you must send me over some Muscat Hamburghs, they are my taste."

"They are, indeed, very delicious," said Kate, "I would rather have one bunch of Muscats, than a dozen Black Hamburghs."

"Well, Lady Downe's is my favourite, there is something sparkling, something piquant about her, and then, too, there is a substance about the berries not like so much sweetened water."

"They are very good," I said, "with one great fault, rather-moreish."

"Janet you eat away, but do not say one word," said Aunt Margaret.

"Oh, Janet is thinking deep waters do not bubble as they run," said Cousin Walter.

"They are very good," said Janet, "but I have eaten better."

"I never did," said our experienced Vine doctor, "and many a professional grower would be proud to show such. In one respect, though, I think you have missed it, Mr. Herbert, you should have kept an accurate account of cost and return, valuing your pleasure at so much, then we might have had some idea how your bank book stood."

"I assure you I dare not do that," said Cousin Herbert, "for cook says they have burned no end of coals and cinders, and Maud and Kate would have brought in heavy damages for spoiled Merino dresses and soiled skirts. Next year, if all is well, I will try to do so, and then we can weigh the worth of our Grapes against our coal bill."

Then Mary, our little helper, came in for her share. "These are for yourself," said Aunt Margaret, "and the others for cook and Martha."

Cook said, they looked very well, but she didn't mind much about such things, they were a great bother; she would

rather have a mug of beer, or a cup of strong tea any time; and after all, Martha, "I don't believe they are all right, for they 'ave left more than half on their plates, maybe they are mouldy as Master Walter said."

"Oh! no," said the housemaid, "quality never eat the skins."

"I eat all," said Mary, with a glowing face, "both skins and stones, they have cost too much to waste."

So we came to the end of the third year, and the day of our great fruit-cutting was the anniversary of the planting. We left many bunches to hang until Christmas, until the new year, if they would keep so long. We sent many bunches away to friends near and distant, and the packing up with great care of those little fruit-baskets was a real pleasure to us, as great, nay, I think, almost greater than the receiving of such would be to us.

"That is right, Kate dear," said Aunt Margaret, coming in as we ticketed our last basket to a lame boy lying ill, "never forget the old, the poor, the sick, nor the unfortunate, gifts to such come back to the giver with a blessing."—Maud.

OLD ORCHARDS IN KENT.

I have been expecting some one to say more respecting the Flemish Apples and Cherries, and the subject so much the more interests me because I came from the very parish Mr. Robson names (Teynham).

I will take as my station Frognell Farm, in the parish of Teynham. When I was a boy I well remember some old Flemish Cherries there in an orchard adjoining the homestead, called the Cherry Orchard; but the Flemish Pippin was chiefly in an orchard called Siller Hill, in Green Street, in the parish of Linsted, adjoining that of Teynham, and on the other side of the road in orchards belonging to F. Barling, Esq., who grows, I believe, all the sorts of Apples, Pears, and Cherries worth cultivating, but the age of the trees I am not at present able to give. My father says when he first went to live on the Frognell estate, about sixty years ago, there were some old Flemish Cherries there then, and I believe, if not recently removed, they are there now; but we must not expect to find trees in places where they are grown for profit after they cease to bear a good crop. At some future time I will give a more satisfactory note on them, after writing to the managers of the orchards of the above-named places.

I cannot but think that the place spoken of by Mr. Robson must be Frognell, or somewhere thereabouts. I will state my reasons for thinking so. In a little orchard on the other side of the road from the Cherry orchard used to stand the ruins of a building called the Moat House. It had a moat round it, but this moat was partly filled up about forty years since. A few years ago the railway went through this little orchard, and I do not know whether any traces of it are left. Not more than 100 yards from the Moat House stood another old building called the Old Bedlam: this building was pulled down about sixty or seventy years ago. The oldest building that I know of standing there now is what is called Frognell Great Barn. I forget the date of it, but I believe it is two or three hundred years old. Another field near Teynham church, about a mile from this place, is all foundations, and in one place is a well, which is now arched over. It appears to me that centuries ago these places must have been of some note.—G. Holmes, *Stroud, Gloucestershire.*

JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY.

The fourth part, just published, completes the first volume of the New Series, and, like its predecessors, is deserving of high commendation. We have heard a complaint that the contents do not embrace a due proportion of practical gardening; but we cannot assent to that complaint. There are abundance of sources whence information on practical gardening may be derived, and the pages of the Society's Journal are better occupied with such relative information as is afforded in the present part by Mr. Berkeley's notes on Orchid Fungi; Professor Goeppert on the Breslau Botanic Garden; Mr. Hadwen's experiments on Temperature, and Dr. Masters on Double Flowers of Primula sinensis.

Mr. Bateman contributes a brief note upon an Orchid-pot, made of earthenware, in the form of a tree's branch, on which he finds Orchids grow as well as on a natural branch, while the disadvantages consequent on the decay of the wood are avoided.

CALIFORNIAN ITEMS.

At the recent State fair at Sacramento, J. Q. A. Warren, of Sacramento, who has travelled extensively among the Sandwich Islands, showed "a collection of Sandwich Island Ferns and flowers, embracing over five hundred specimens of beautiful texture; cabinet woods of the Islands highly polished; seed and seed-pods, very curious; Sandwich Island Cotton in the boll and loose; samples of Sandwich Island Rice in the paddy, cleansed and polished; Poi Calabash and Water Calabash; silk cocoons of immense size, raised by himself at the Islands from eggs furnished by L. Prevost; Coffee, Castor-oil Bean, Bread-fruit, Ginger, land shells of one hundred varieties, and a large collection of Island curiosities."

We also learn from copious reports in our San Francisco and Sacramento exchanges that the fair in most respects was a great success. The wonderful growth and yield of all the cereals, fruit, and vegetables, has ceased to be a wonder and topic of remark, and all attention is being turned to new topics. The state is already becoming famous for wool and wine, as we see the wool quoted in all our eastern markets, and meet the wine at all our principal fairs and on the shelves of the druggists. Cotton and silk are now attracting much attention in California. We take from the *Sacramento Union* the following items of objects at the fair.

"L. Prevost, of San Jose, has a large collection of silkworms on exhibition. In fact, silk culture, from the early stage of the worms feeding on the Mulberry leaf to reels of silk itself, is represented in this gentleman's exhibit; and the following extract from a private letter to him will show that a still more advanced stage will soon be added. Under date of San Francisco, September 17th, 1866, Meyer & Neumann say: 'Perhaps you will perceive in to-day's *Alta*, that we finished a small piece of rep, but the machinery not being in proper working order yet it is not of that quality which we intended to exhibit at the State Fair. Nevertheless, one of us will come to Sacramento the day after to-morrow, and bring the sample along with him.' Many of the cocoons exhibited by Prevost were raised from eggs furnished to him by different parties."

The Oakland Manufacturing Company exhibit two pieces of cotton sheeting as samples of the first hundred pieces, two as samples of the first thousand pieces of 40 yards each, and two of cotton shirting as samples of the first hundred pieces of 40 yards each, manufactured in this State. The mill of this company wove its first yard of goods on the 1st of December, 1865, and has been in active operation the most of the time since. The company have paid from twenty-five to thirty cents. per pound for cotton, and manufactured it into goods at an expense of fifteen cents. per pound. The mill is located in the village of Clinton, Alameda county. Among other cotton they have worked up a small lot of the variety known as the green seed, which they found to be equal, if not superior, to the Tennessee and Georgia upland cotton. With the experience of the past for a guide, a great improvement is expected in the present and future crops. They confidently expect that the cotton-growers of this State will be able to furnish them with sufficient raw material to keep their manufactory in constant operation. They have just entered into a contract to furnish twenty thousand yards of manufactured cotton for exportation to Mexico."

Hop Culture.—The *Alta's* correspondent says:—"No branch of agriculture pays better than Hops. For brewers' use the Hops of California have double the strength of any imported. We visited the Hop vineyard of Flint & Haynie, on the flats of Norris' ranch, American river, near Sacramento, recently. It covers twenty-five acres, and was planted in February and March of this year. The vines stand 8 feet apart. It is well demonstrated that short poles and cross-trailing on connecting cords, produce better crops than high poles. The crop for this first year is 24,000 lbs., worth at seventy cents. per lb., 16,800 dollars. Next year the plant starts from fixed roots of one year's growth, and the crops will double. It will be seven years, probably, before the plant will show deterioration."

Castor-oil Beans.—The Castor-oil Bean has been grown the present year (1866), to a much greater extent than is generally understood, and from the success of the present year we think the growing of the Bean and the manufacture of the oil from it may be said to be successfully begun.

The Northern District Fair of the present year, can claim

the credit of making the first exhibition of the Castor-oil Bean in any quantity. There was a large sample of nearly 100 lbs. exhibited by J. D. Blanchar, Esq., grown near Marysville.

We obtained the following statistics:—Dr. McDonald has this year one hundred acres of Castor-oil Beans. Mr. Chas. Justice has a field of five acres. W. H. Drum and many other persons have grown a greater or less number of acres, and this beginning has given assurance that the work that thus began will be continued, and the Castor-oil Bean and the oil from it will ere long be numbered among our valuable exports.—(*California Farmer.*)

PEAR CULTURE.

(*Continued from page* 51.)

PRUNING AND TRAINING.

Espalier or Horizontal Taining.—Commencing with a maiden tree, which is one that has never been headed or cut back, it will have a clean, straight stem, and be moderately strong, or rather such trees are to be preferred, as the buds are not so widely distributed. It should be planted carefully and early in autumn after the leaves begin to fall. If they have fallen, or from the fall of the leaf to the middle of February, or beginning of March, during mild weather, the tree should be cut back to within 1 foot of the ground, always cutting from the back of the bud, as shown by the bar at *a*, *fig.* 3, indicating the cut. This will be the commencement of the first season's pruning.

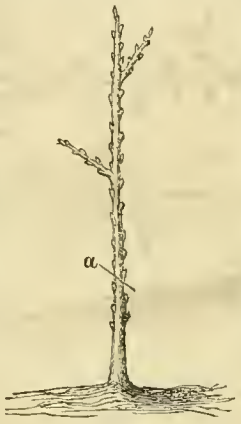


Fig. 3.

Shoots will be produced in spring from the three uppermost buds, that situated the highest should be trained upright, and the other two respectively to the right and left, and as nearly at an angle of 45° as can be; only if one grow stronger than another depress it, and raise that which is weak, so that shoots as nearly as possible of equal strength may be produced. This is a main point, and must be attended to; for if a shoot once be formed weak, it is difficult to render it equally strong with its neighbours, and a tree with longer shoots on one side or part than the other is neither pleasing nor profitable. This is the first season's treatment as regards pruning and training.

In the autumn the appearance of the tree will be somewhat similar to that represented in *fig.* 4, and the upright shoot

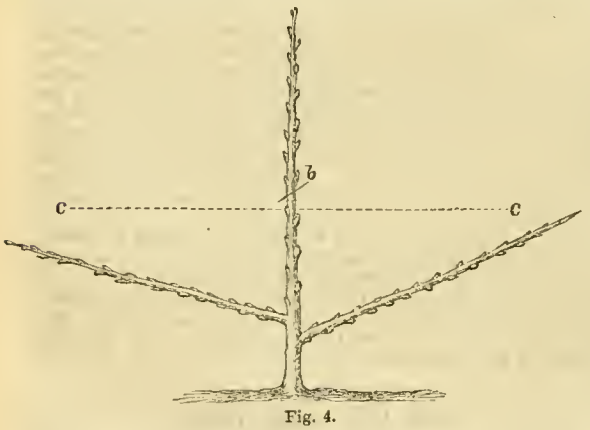


Fig. 4.

should be cut to within 1 foot of the point at which it was first shortened, or as near to that as a bud with two buds below it eligible for horizontals will permit. It should be remembered at the time of shortening the upright shoot, that 1 foot is the distance to be allowed between the horizontals; therefore, they, or the buds left to produce them, should be a little below the line along which they are ultimately to be trained. This will be readily understood on reference to *fig.* 4, in which *b* is the place where the upright shoot is cut, and *c c* the horizontal line. As the side, and particularly the lowest branches (it is usual to term a shoot of the current year, and until it produces secondary shoots a "shoot," but afterwards a branch when it produces side shoots, whether headed or not), cannot be too strong they should not be depressed or brought to the horizontal line for another year; and any shoots they may produce should be allowed to grow unchecked, unless they become too strong for the leaders, when they should be brought back to six leaves. The leaders of the side branches and upright are not to be stopped, but should respectively be carried to the right and left, and that of the upright in a vertical direction; and the side shoots are to be trained at an angle of 45°, as in the first season. The shoots or laterals from the two side branches, if stopped at the sixth leaf, may shoot again; these are not to be stopped for the present.

Fig. 5.

In the autumn of the second year the tree will somewhat resemble *fig.* 5. The leader or upright shoot should be cut back to *a*, in the same way as it was in the preceding season, and the laterals, *b b*, shortened to two eyes, and to not more than an inch in length. The shoots upon the side branches will come from the eyes left on the lateral wood. Such shoots are to have their points taken out when they have made six leaves, and sub-laterals being produced from them, such are to be stopped at the third leaf. The side branches may remain for another season at an angle of 45°; that, and the laterals not being close-pinched, will secure for them more vigour than were they trained horizontally, and the laterals closely pinched. The bars show where the knife is to be used.

In the autumn of the third season the tree may have the lowest pair of side branches brought to the horizontal line, *fig.* 6, *a a*, those of the last year's production still being retained at an angle of 45° for another season, when they are to be brought to the horizontal line, the leader or upright being cut back as before to furnish the leader and side branches of the following year. The side shoots, *b b*, are not to be shortened, nor the growth or leading shoots of the side branches, *a a a a*, in this or subsequent seasons, until they reach the limit of the space they are to occupy. The laterals, *d d d d*, must be cut in to two eyes or buds in this and all subsequent seasons, but the very short, stubby growths about an inch in length, and which produce a tuft of leaves, are never to be cut, but should be left at their full length. These are spurs upon which the fruit of the Pear is produced, and are represented at c c, in *fig.* 5, and *e e e e*, *fig.* 6.

The following year's treatment is simply a repetition of that in the preceding one; the two side branches produced in the previous season are to be brought to the horizontal line, and those of the year allowed to grow at an angle of 45° for a twelvemonth longer, when they are also to be brought to the horizontal line. In after-years, stopping the laterals, shortening in autumn to two buds or an inch, heading down the upright shoot, training in the side shoots at an angle of 45° for two seasons, and subsequently bringing them to a horizontal position, should be persevered in until the upright reaches the top of the wall. When the tree attains nearly the height of the wall, it will not be convenient to train the side branches at an angle of 45°, neither is it desirable, as they will acquire

sufficient vigour; therefore, towards the autumn of their production, they may be trained horizontally.

The above is undoubtedly the simplest mode of forming horizontal trees for walls or espaliers, as once the horizontals are started there can be no doubt in training them. The growth is easily under command, the sap equally distributed, the branches equally exposed to light, and though the distance of 1 foot between the horizontals may seem great at first, it is not more than is necessary for the full development of the leaves and spurs, their due exposure to light and air, and the proper maturation of the fruit. At 9 inches apart the side branches or horizontals more thickly cover the wall or espalier, but at that distance the wall is so completely covered with foliage that the sun's rays never reach it, consequently no heat is ra-

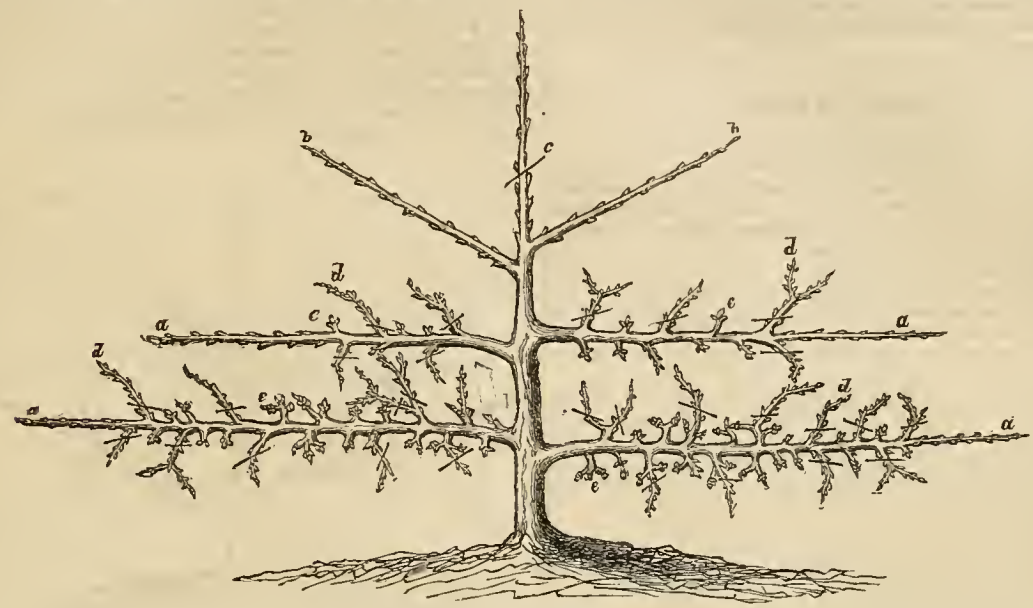


Fig. 6.

diated to the benefit of the tree in cold seasons; and in the case of espaliers the side branches at 9 inches apart so overcrowd and shade each other, as to prevent the proper development of foliage and perfection of fruit-spurs. 12 inches is the distance to be recommended between the horizontals, both for walls and espaliers.

The height to be recommended for espaliers is 6 feet, the first pair of horizontals being 1 foot from the ground. The rails should be of wire, and the upright and straining posts should be of iron in preference to wood, on account of durability. The uprights or supports may be let into stones about 2 inches, and run in with lead. They should be midway between each pair of trees, as the branches are more rigid near the stem, and have its support, besides which they seldom bear so large a quantity of fruit as nearer their extremities. No. 8 wire is the most substantial, though No. 12 will do. Both supports and straining posts should have four coats of oil paint; red lead is the most durable for ironwork.—G. Abbey.

(To be continued.)

NOTES AND GLEANINGS.

A rumour having been in circulation that Mr. William Bull had become the possessor of Mr. Standish's new Hermaphrodite Aucuba, we are requested to state that there is no foundation at all for the statement, that the Aucuba is in the sole possession of Mr. Standish, and that he does not contemplate, nor ever has contemplated, disposing of it, until he does so to the public generally in the ordinary course of trade.

—— At a meeting of the Quekett Microscopical Society, Dr. Tilbury Fox, one of the Vice-Presidents, read a paper on "Human Vegetable Parasites." The author's chief aim was to elicit from the members information in regard to the part played by Fungi in the production of diseased conditions of plants, men, and insects, and he confined his remarks to the following points: First, the probability of the frequent existence of the germs of fungi in the textures of healthy living beings, and in situations to which the external air has no access; the modes by which fungi effected an entrance to those spots; the fact that parasitic germs enter the systems of plants and animals at a much earlier date than is generally believed, through the soft textures of the young tissues; that fungi lie dormant a long time in the system, until favourable conditions occur to promote their growth; that fungi only become sources or inducers of disease when they develope to an undue amount; that fungi will not flourish on a healthy surface; the distinctive features of vegetable and animal structures, especially artificial germination; and the effects, chemical and other, produced by the growth of fungi. Dr. Fox illustrated all these different conditions by a reference to the phenomena of "ringworm" and allied diseases. Mr. M. C. Cooke gave a number of very interesting facts in reference to the parasitism of plants, entirely confirmatory of Dr. Fox's observations; detailing cases in which the germs of mildew and rust must have entered very early indeed into plants, and even been contained in the seed, developing as the plant grew up; also where the elements of rust entered through the first pair of young (cotyledonous) leaves. He also stated that he never looked for parasitic fungi on those plants that appeared vigorous and healthy, but was sure to find them on those which looked sickly or grew in unhealthy places.

—— With very great regret we have to announce the death of Mr. B. P. Brent, to whom our readers have been so often indebted for useful information in our pages. Mr. Brent edited for us "The Pigeon Book," and "The Canary and Other Song Birds," the subjects of which he well understood. Mr. Brent died at his residence Parkhurst House, near Uckfield, Sussex, on the 18th instant.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Where the soil abounds in silica, or is what is technically termed too sandy, procure, if possible, a quantity of clay and spread it from 2 to 4 inches deep over the whole surface of the soil, allowing it to lie for a time that the air and frost may pulverise it, when it may be dug in, and it will very much improve the ground. The use of sand in the same way where the soil is a heavy clay will likewise be very beneficial. *Capsicums*, seed of the large sort should now be sown in pans or

pots placed in heat; as soon as the plants are an inch or two high, put them in small pots and replace them in heat; afterwards shift them when necessary, until the end of May, when they may be planted out on a south border. *Cucumbers*, the plants in bearing in the forcing-house should have a top-dressing of fresh rich soil; use every means at command to keep them free from insects. When the young plants in the seed-bed have made one rough leaf, the leading bud above it should be removed so as to cause the plants to throw out two shoots from the axils of the seed-leaves. Cuttings put in and struck in the seed-bed will come into bearing quicker than seedling plants. *Herbs*, keep up a supply by introducing some potted plants into any forcing-house, or into a frame or pit where there is heat. *Lettuce*, sow Green or Brown Cos in shallow boxes placed in any situation where there is a command of heat. This sowing will only be necessary where there is a deficiency of autumn-sown plants, otherwise no seed need be sown till the middle of next month. *Potatoes*, plant in pits or frames where there is a slight bottom heat; the sets should have been previously laid in a forcing-house to shoot. Sets may be planted in pots to be placed in any convenient part of a forcing-house until the shoots are several inches high, when they may be planted in frames, but we do not much approve of this plan as we have found it result in a deficient production of tubers. *Tomatoes*, sow seed of the Large Red immediately, so as to have good plants when the weather shall permit of their being turned out.

FRUIT GARDEN.

It is now a good time to wash fruit walls, and we would strongly recommend our readers to do so, particularly walls against which Peaches are trained. The washing should be done before the trees are pruned, as if a few buds are rubbed off it will not be of so much consequence as it would be after pruning. A good mixture is composed of lime, sulphur, and soot, brought to the consistence of paint with strong soapsuds. About 1 lb. of sulphur should be used in every pailful of lime after being mixed with the soapsuds and sufficient soot to give it a dark grey colour. The trees should be tied from the wall and the mixture laid on with a whitewash brush. Prune and remove the suckers from Filberts, which rarely, except in Kent, are managed as they should be. The making of fruit-tree borders, particularly for the finer kinds against walls, requires the use of fresh turfy loam; let that, therefore, be in readiness. The only addition should be road scrapings, or something similar, where the loam is heavy, for the Peach and Apricot; use loam alone for Cherries and Plums, adding a small quantity of rotten cowdung for Pears, but not if the loam is rich. Dust over on damp mornings with soot and lime Gooseberries, &c., which are attacked by birds. Raspberries may have the old wood removed and the new shoots thinned. Leave the shortening of them till another time.

FLOWER GARDEN.

With the exception of pruning and thinning, or wheeling when the weather is frosty, little can be done in this department at present. Any of the shrubbery borders which may require a dressing of fresh soil or manure, should, however, be attended to whenever the weather is favourable for such work. Proceed with any alterations in hand involving the removal of a considerable bulk of soil, cutting walks, or anything which can be judiciously done now, in order to have the hands at liberty for the ordinary routine of spring work which will soon be demanding attention.

GREENHOUSE AND CONSERVATORY.

As the season is at hand when the business of increasing our stock of plants will demand particular attention, it will not be inappropriate to suggest the advisability of preparing a place calculated to afford the required convenience. There is scarcely a gardener who is not called upon to apply his skill to replace the losses that invariably and necessarily attend the occurrence of a rigorous season like the present, and yet we rarely find a proper situation appropriated for the purpose. For the plants principally in demand for decorating the flower garden, such as Pelargoniums, Fuchsias, and Verbenas, the common plant-houses are unfortunately found sufficient in many cases; and we see them crowded with pots of cuttings, to the destruction of all order and propriety, in addition to the insects which are often introduced along with them. What we wish to recommend is a small pit constructed with beds to contain plunging materials, and provided with a heating apparatus capable of supporting a bottom heat of 90°. This, with a complement of bell-glasses, would enable the gardener not only to raise his stock of summer plants with certainty and expedition, but give him the oppertunity of multiplying his rare and more difficult plants at the seasons most suitable to them. The unsettled state of the weather lately has called, and most probably will continue to do so, for much judicious management in regulating the temperature of large greenhouses. Naturally plants will make little pregress at this season, but they may he stimulated to unhealthy activity if attention be not directed to the regulation of the temperature. Eradicate scale and other insects from climbing conservatory plants, at the same time tie and arrange them. Care must be taken that Camellias receive no check, or their buds will be endangered. Brugmansia sanguinea, a noble conservatery plant, demands similar attention. In greenhouses it will be necesaary to examine softwooded plants in order to remove decaying leaves, and make an arrangement that will give them liberty to receive the full benefit of light and air.

FORCING-PIT.

No diminution of temperature must be allowed here. Pinks after they have made a little growth require to be removed to a cooler place, or the buds will fall. Gardenias require a warm moist atmosphere, which may now be slightly increased as they exhibit activity. Much care is necessary with Dutch bulbs, Hyacinths, &c., in removing them from the plunging material. If they are suddenly exposed to light a premature development will be the consequence. They should be placed in a somewhat dark part of the pit for a few days, and abundance of atmospheric moisture applied; on the last much depends.—W. Keane.

DOINGS OF THE LAST WEEK.

Never has the changeable character of our climate been more conspicuous than during the first fortnight of the year. The thermometer on the 3rd and 4th was close on zero as a minimum, up above 50° as a maximum in the shade on the 7th and 8th, and then swept down again from the 10th. The frost on the last of these dates, though scarcely so severe, was, from the absence of snow, likely to do more damage to young exposed crops of all kinds than the frosts preceding it. The little skiffs of snow which we have had, such as half an inch on the 14th, and as much more on the night of the 15th, will do something to mitigate the evil in this respect. Another favourable circumstance was that when the frost was unusually severe the atmosphere was very still, and, therefore, the cold did less to lower the temperature of houses and injure plants than a frost of scarcely half the intensity accompanied by a dry, searching, scorching wind that would find its way into every hole and cranny. The weather has been so exceptional that it would be well to notice a few simple matters which, owing to circumstances, occupied a considerable share of our attention.

Protecting Material.—Dry straw, litter, and old hay are invaluable for protecting purposes, and their value is greatly increased in proportion to their dryness, a matter which is very frequently forgotten, as, in uncovering, the men are very apt—say in the case of glass—to collect the covering in front of the frame or pit, just in the place where, if a shower come, the water will run off the glass and into the covering. This is not of much importance if that covering is to be turned into fermenting material, but is of great moment where there is, as in most places, a difficulty in procuring dry material, and not without paying well for it. It would be easy to avoid this by placing the covering in little heaps where the rains would not wash into it or into the base of the heaps, and thus be raised through the whole by capillary attraction. Without much trouble such little heaps cannot be defended from the rain that falls, but if thrown together like little haycocks, it is only the outsides that will become wet; and very little practice will show the great difference between dry and wet litter in excluding cold, and that which is much the same, in excluding heat.

Owing, we believe, to the comparative stillness of the air in the severest frosts, and the somewhat dry state of the litter, we have never known such hard frosts kept out by such a small amount of covering. Sometimes in a very sharp morning, when at first sight we thought it would be prudent to shake up the surface of the covering, and thus break the lines of radiation and conduction, and so force the frost to begin its work afresh on the surface, or even to add a fresh sprinkling to the surface, we have been saved either labour by examining and finding that the frost had not been able to penetrate the slender covering. Let us, however, add here that a covering of litter would be greatly increased in its protecting properties,

in proportion as its surface was frequently broken and turned so as to break the lines of the radiation of heat.

Since the second frost we had uncovered no cold pits and frames until the bright day of the 15th; and then, as the air was very keen, we merely uncovered a part of the glass to give the benefit of sunlight, and covered up again early in the afternoon. We were rather afraid that the cold places were a little too warm; but when, in the case of Cauliflowers under hand-lights, we found the plants were lying on the ground, both the ground and leaves crusted a little, we let well alone, and allowed the covering to remain on, knowing they were better as they were than if alternately thawed and frosted. Such plants will sustain no injury when thus slightly frosted if they be covered up for weeks, only they must not be uncovered until properly thawed, nor must they be exposed to a fierce sun for a few days afterwards.

It would not be safe to expose Calceolarias and the generality of the hardier bedding plants to so much cold as Cauliflowers, Lettuces, and Radishes will stand; but if these should be covered up days and weeks it is necessary that the atmosphere about them should be as much above freezing as to keep them safe, and cold enough to prevent anything like growth. An average of 35° under glass is good under such circumstances. In such a temperature they will not grow, and little moist vapour will be raised to create damps and their evils. In very cold dull days even Asparagus in a hotbed-frame was left covered-up, but in fine days it was exposed to the light; otherwise, from the heat below, the heads or shoots would be apt to be drawn and too much blanched.

Double Roofs or Sashes.—Except in the way of experiment we have had little practice with these, though recommending them to others. It would be very interesting to know how such large houses as the fernery of Mr. Bewley, near Dublin, behaved during this frost, as well as those belonging to other gentlemen who have given the system a fair trial, and that, where it was desirable to have a tolerably regular temperature and a somewhat equable degree of atmospheric vapour with the least application of artificial heat. We shall be surprised if these conditions were not more easily secured, and at a less expense for fuel, in houses with double sashes than in those glazed in the usual way.

The necessary amount of atmospheric moisture in such severe weather is most easily secured in common houses and pits by allowing the heat to fall, so that the plants shall be safe, giving what little air may be necessary at the highest point of the roof, and chiefly in sunshine, preventing sun heat and fire heat meeting and raising the temperature so much as to require much cold air to be admitted, and covering the glass of front sashes of houses and pits, however slenderly, so as to diminish the escape of heat from the glass, and thus obviate to some extent the necessity of large fires. In such weather in common houses, from which it is next to impossible to exclude the external air, more evil is done by admitting that air freely at the ventilators than in giving none at all beyond a little in the sunniest days, after the sun has affected the temperature of the house, and when, in expectation of its shining, the fires have been allowed to go out or become very low. The man who cannot be brought to study and consider whether there is likely to be sunshine early or not is not fit to take the management of houses, or of the furnaces that heat them, if the requisite amount of economy in fuel and labour is to be secured. Thus, as alluded to above, suppose that the mean temperature of a house in average weather is 70° by day and 65° by night; to maintain the house at that temperature in such weather as we have lately had would not only, if it were large, require a large quantity of fuel, but also a great amount of vapour to be thrown into the atmosphere, which vapour of itself would require additional heat to raise it, for the higher the temperature of the air the greater would be its capacity for moistnre; and then again the higher the temperature thus maintained, the greater would be the necessity for admitting cold frosty air in sunshine.

Let two facts be kept in mind, and then there will be less perplexity about firing and ventilating: First, there is no heat so good and so cheap as sun heat; and secondly, in every way it is mistaken policy to allow in plant-houses a strong heat from a fire and a strong heat from the sun to meet each other. In a common glazed house, with some openings between laps, &c., and in such a cold day as the 15th, but dull and without sun, we would have put on a small fire, and would have given no air except what found its way in in spite of us. In a dull damp day, with an average temperature of 40°, a brisk fire and moderate air-giving would do good by setting in motion a stagnant atmosphere; but we see no reason for making strong fires in cold sunshiny days that we may neutralise the effects by sending in huge volumes of cold, dry, frosty air, both processes being exhaustive of the plant's energies.—R. F.

TRADE CATALOGUES RECEIVED.

William Cuthbush & Son, Highgate, London, N.—*Catalogue of Vegetable, Flower, and Farm Seeds.*

Richard Dean (Assistant Secretary to the late International Horticultural Exhibition and Botanical Congress), Ealing, London, W.—*Catalogue of New and Choice Vegetable and Flower Seeds.* Though chiefly confined to novelties much care has evidently been exercised in their selection, and there are in addition useful descriptive and cultural remarks which will render this Catalogue what it professes to be, "A 'Welcome Guest' at the Gardener's Fireside."

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N.—*Descriptive Catalogue of Flower and Vegetable Seeds.—List of Choice Bedding and Border Plants.*

Hooper & Co., Central Avenue, Covent Garden Market, London, W.C.—*General Spring Catalogue.*

COVENT GARDEN MARKET.—January 23.

During the past week we have experienced a great falling off in the supply of rough goods, and the continued frost has compelled us very materially to modify the importation of French produce; still the prices are but nominally higher, and any increase would soon check the demand. Very few arrivals of Potatoes have been reported, and the best are worth more money. The trade in Broccoli from the west of England is almost suspended. Dessert Apples and Pears remain the same.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	2	0 to	3	0	Melons	each	2	0 to	4	0
Apricots	doz.	0	0	0	0	Nectarines	doz.	0	0	0	0
Cherries	lb.	0	0	0	0	Oranges	100	5	0	10	0
Chestnuts	bush.	10	0	18	0	Peaches	doz.	0	0	0	0
Currants	½ sieve	0	0	0	0	Pears (dessert)	doz.	3	0	6	0
Black	do.	0	0	0	0	kitchen	doz.	2	0	4	0
Figs	doz.	0	0	0	0	Pine Apples	lb.	4	0	8	0
Filberts	lb.	0	0	0	0	Plums	½ sieve	0	0	0	0
Cobs	lb.	0	9	1	0	Quinces	doz.	0	0	0	0
Gooseberries	quart	0	0	0	0	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	6	0	8	0	Strawberries	lb.	0	0	0	0
Lemons	100	5	0	10	0	Walnuts	bush.	10	0	20	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes	each	0	6 to	0	8	Leeks	bunch	0	6 to	0	0
Asparagus	bundle	6	0	10	0	Lettuce	per doz.	2	0	3	0
Beans, Kidney	per 100	3	0	4	0	Mushrooms	pottle	1	0	2	0
Scarlet Run.	½ sieve	0	0	0	0	Mustd. & Cress	punnet	0	2	0	0
Beet, Red	doz.	2	0	3	0	Onions	per bushel	4	0	5	0
Broccoli	bundle	2	0	3	0	Parsley	doz. bunches	12	0	0	0
Brus. Sprouts	½ sieve	3	6	0	0	Parsnips	doz.	0	9	1	3
Cabbage	doz.	2	0	3	0	Peas	per quart	0	0	0	0
Capsicums	100	0	0	0	0	Potatoes	bushel	3	0	4	6
Carrots	bunch	0	6	0	8	Kidney	do.	0	0	4	6
Cauliflower	doz.	4	0	8	0	Radishes	doz. bunches	1	0	1	6
Celery	bundle	2	0	3	0	Rhubarb	bundle	0	9	1	6
Cucumbers	each	1	0	2	0	Savoys	doz.	3	0	4	0
pickling	doz.	0	0	0	0	Sea-kale	basket	2	0	3	0
Endive	doz.	2	0	0	0	Shallots	lb.	0	8	0	9
Fennel	bunch	0	3	0	0	Spinach	bushel	5	0	6	0
Garlic	lb.	0	8	1	0	Tomatoes	per doz.	0	0	0	0
Herbs	bunch	0	3	0	0	Turnips	bunch	0	6	0	0
Horseradish	bundle	4	0	6	0	Vegetable Marrows	dz.	0	0	0	0

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

Florists' Flowers, &c. (*G. Moss*).—There is no such work as you name. If you enclose sixteen postage stamps with your direction, and order "Flower Gardening," "Greenhouses," and "Florists' Flowers," they will be sent to you post free.

Garden Plan (*A. F.*).—Write to Mr. Gibson, jun., whose advertisement is in our first page.

Pine and Fir (*A Beginner*).—They are popular names, and are indiscriminately applied to the section Abietinæ of the Coniferæ.

Willows and Osiers (*Idem*).—These are all members of one genus, and the names are indiscriminately used in popular conversation. If any distinction is commonly attempted, it is by calling every tree Salix a Willow, and every Salix annually cut down for its rods an Osier.

Daphne odora Flower Buds Falling (*A Young Gardener*).—You have excited your plant into growth, and caused it to cast its buds, not having allowed it sufficient time to swell them; although they were not cast until a few days ago, they have probably been inactive for some time. You should place the other plant in a light, airy situation in a house with a nice, growing, rather moist temperature of from 45° to 50° at night. It will flower in due time. A temperature of from 55° to 65° by fire heat is too high.

Plants Injured by Fumigating (*T. S. L.*).—The mischief is to be attributed to your having used live coals for igniting the tobacco. The scorched leaves will for the most part fall, and the others will be so unsightly and so liable to mildew that we would have them picked off. Your plants will recover, though it will be some time before they do so. In future place a few pieces of charcoal in a fire, and when quite red use them instead of live coals for placing at the bottom of the cage, and put the tobacco upon the charcoal.

Sulphur and Clay for Vines (*Iota*).—1, The composition should consist of two-thirds sulphur and one-third clay, by bulk, with enough water to give it the consistency of paint. 2, It is very desirable to limewash the walls, adding to the lime one-third of its bulk of sulphur. 3, A mixture of lime and sulphur is not so good for painting the Vines as sulphur and clay, and we do not recommend it for such purposes.

Asphodelus Culture (*Idem*).—You do not say which of the species you have, but we presume it is hardy, and, if so, its treatment will be that of a perennial thriving in an open but sheltered sunny situation. Use a compost of sandy loam, mixed with one-third leaf mould. Give it a top-dressing of the same kind of soil every autumn, neatly pointing it in around the plant in spring.

Book (*Asparagus*).—"The Garden Manual." You can have it free by post if you enclose twenty postage stamps with your address. It is quite suitable to your requirements.

Hot Air from a Kitchen Range (*Rusticus*).—We are rather surprised that the opening of the usual valve did not help you a little, but they are generally too high-placed for the purpose. You have to some extent misunderstood what we said as to the position of the second hole we advised. According to your section you have a hole made for a two-inch pipe at the top of the left-hand side of the back of the oven, and what we advised you to do was to make a similar hole for a pipe communicating with the *bottom* of the right-hand side of the back of the oven. Hence, too, the necessity for the two plugs when cooking in the oven was required. We know the difficulty of arranging these matters when the mistress of the house has to be consulted, and, of course, the interests of the oven and of the greenhouse might thus often clash: therefore, we also proposed closing in a chamber over the oven, and taking the heat from that instead, but even then you would mostly lose the place above the oven for general purposes. The heat from the oven is not by any means lost in ordinary cases, as it greatly tends to warm the room. We think as you managed the first hole in the back of the oven, you might manage another, but at its bottom. If not, however, we would advise a small stove, iron or brick, for your glazed building. If the place is small you will obtain much heat from the chimney. We would do what we could to oblige.

Mrs. Pince's Black Muscat (*G. P.*).—It does not require so much heat as do the common Muscats, but can be grown in an ordinary vinery. It is a very robust grower, and abundant bearer, not requiring to be grafted.

Vines and Dwarf Kidney Beans (*C. S., Chichester*).—The house has been kept too close; more air should be admitted, and more moisture kept in it, and not so high a temperature either during dull days or during the nights. In the stage of growth which the Vines are now in, shoots 6 inches long and drawn, 75° by day and 60° or 65° at night should be the extremes.

Error.—At page 44, column 1, line 13 from bottom, for "south" read "north."

Chiswick Temperature (*Inquirer*).—The temperature recorded on the morning of the 5th inst. as the lowest during the preceding twenty-four hours is correctly given by us in our Journals of the 8th and 15th, as 11° below zero. You did not notice the *minus* sign preceding the figures on the 15th.

Black Currant Bud Insect (*W. T.*).—The Black Currant buds in the neighbourhood of Glasgow are at this season of the year infested by immense numbers of an exceedingly minute, undescribed, four-legged species of mite, which causes the buds to swell, and renders them unfruitful. We cannot advise any plan for the prevention of this injury, except that of picking off and burning the infested buds.—W.

Raising Hornbeam (*R. H. A.*).—Hornbeam is raised very abundantly by seed. Cuttings may possibly be struck, but that mode is less likely to afford good healthy plants. In Hertfordshire, where the tree is extensively grown as copsewood, it is customary to bend down some of the poles as layers when there is a lack of stubs, and by fastening them to the ground they strike root, but we think all the young trees are reared from seed. Its reputation as copse-wood is due to its making excellent firewood, otherwise as a timber tree it is of slower growth than the Beech, and never attains the size of that tree. It also cuts better as a coppice tree.

Uses of Frame (*Nemo*).—You may use your frame as you propose for raising Lettuce plants by filling it to within 12 inches of the glass with dung, and placing 3 inches of soil over the latter. We would make a bed of hot dung from 18 inches to 2 feet in height, and a foot wider than the frame all round; put the frame on, fill it to within 9 inches of the glass with hot dung, and on that place 3 inches of loam and leaf mould in equal parts, with an inch of fine soil over it. The bed should be made evenly and well trodden down, but not the soil. We would then, after levelling the surface, sow some Lettuce, Cauliflower, and Celery seed, appropriating one-third of the frame to each. The light may be put on, and kept close until the plants appear, when it should be tilted in mild weather until the plants show their rough or second leaves, for if the frame be kept close the plants will become drawn. When the air is frosty keep on the light, and protect at night with a covering of mats. The bed may be made in the last week in February or first week in March. The Lettuce and Cauliflower plants, when sufficiently large to handle, may be taken up and pricked off in a sunny sheltered situation. This will give those left in the frame more room, and by the time the Lettuces and Cauliflowers are cleared out the Celery will need pricking off, which may be done within the frame. You may use the frame in summer for Cucumbers, and in winter for protecting Cauliflower plants.

Making Vine Border (*F. S.*).—It would be well to make the border as much above the ground level as you can for dryness and warmth, and it should be 3 feet deep. If the subsoil is wet, clayey, and unfavourable, the bottom of the border should be covered with a thin layer of lime rubbish, slope from the house, and a drain should run lengthwise at two-thirds of the width of the border. The lime rubbish must be beaten quite firm, and two more layers of similar thickness laid on and rammed hard. Upon the concrete bottom place 9 inches of brickbats or stones, the roughest at the bottom. A layer of sods, grass side downwards, may be placed on the drainage, and the border may be composed of turf cut from a pasture, 3 inches thick, where the soil is a good hazel or yellow loam inclined to be sandy rather than clayey. This is to be chopped roughly with a spade, mixed with one-sixth old mortar rubbish or chalk, and one-tenth half-inch bones. The compost should be carried up to a thickness of 2 feet 6 inches, and may be beaten with a fork as the work proceeds, but under no circumstances trodden down. The border will settle down gradually. Thompson's "Gardener's Assistant" is a good work for general purposes, and may be had through any bookseller.

Camellias Propagating (*A Subscriber*).—Camellias may be propagated from cuttings, and, indeed, are largely propagated in that manner, but it is only the Single Red for stocks. The double kinds grow very indifferently from cuttings, hence they are grafted on stocks of the Single Red, which is the only eligible mode of propagation to secure a free-growing plant.

Watering Pelargonium Cuttings (*Celia*).—The plants with the leaves flagging and the soil in the pots dry, ought to be watered. Whenever the soil becomes dry, and the leaves of the plants are affected thereby, give as much water as will come through the pots. Water will not be necessary so long as the leaves do not flag, but in your greenhouse it ought to be given before they do so to any great extent. Water the plants at once, and again when they require it.

Evergreen Hedge (*H. A. Dixon*).—You may form a hedge at once of American Arbor Vitæ (Thuja occidentalis), by procuring plants 4 or 5 feet high; they are kept in stock at that height by the principal nurserymen. They should be planted 1 foot apart. This Arbor Vitæ will not do for a fence to keep out cattle. Privet makes a good hedge when planted alternately with Thorn, and it will do for an outer fence; so will Thorn and Holly, which make the best of all hedges. Arbor Vitæ and Yew make the best evergreen hedges, but Yew foliage is poisonous to cattle.

Apricot *versus* Peach Treatment (*A. Z.*).—Your gardener unnails your Peach and Nectarine trees, so that he may cut out the wood that has borne fruit in the previous year, and any old, worn-out, and useless shoots; also to give each shoot and branch its proper share of the space, and secure the proper covering of the wall. It is evident your gardener acts on the long-pruning system with the Peach and Nectarine. He does not unnail the Apricot tree, because the tree chiefly produces its fruit on spurs, and a branch once made continues to furnish fruit-spurs so long as it exists. He will nail in a young shoot where practicable, and occasionally cut out a spurless branch, training a young one in its place; beyond that he will not interfere with the unnailing of the tree, and consequently no readjustment of the branches and shoots is needed.

Forcing Vines (*A Suffolk Subscriber*).—To have the Grapes ripe by July it will be necessary to start the Vines the beginning of February. To secure this the border ought to be protected, and you will require fire heat from February to July inclusive: hence we conclude it would hardly be a profitable undertaking, considering the smallness of the house.

Annuals for Ornament and Bouquets (*H. F. F.*).—We are making inquiry, and will answer your questions fully next week.

Sowing Latania and Chamærops Seed (*Helen*).—The seeds may be sown singly in three-inch pots, in a compost of sandy peat, loam, and leaf mould in equal parts, adding one-sixth of silver sand. The pots should be well-drained, and the seeds sown so as to be covered twice their diameter with soil. The soil should be kept moist, but not saturated. The pots may be plunged in a hotbed of 90° if you have such, and, if not, in one of not less than 75°; the atmosphere should have a mean temperature of 70°. You will have to exercise patience in waiting for the appearance of the plants, for the seeds are slow in vegetating.

Camellia and Azalea Management (*A Novice*).—The Camellias and Azaleas will do excellently in your greenhouse from which frost is excluded. Give them a light and airy situation, yet free from currents of cold air, and water when the soil shows signs of dryness; but it must not be allowed to become so dry as to cause the foliage of the Azaleas to flag, and that of the Camellias to become limp, nor, on the other hand, should repeated and regular waterings be given when moisture is not required. Air should be given whenever the external atmosphere is mild, and protection from frost should be afforded. The above has reference to the winter treatment, which will continue in your case from September to May. After the plants have bloomed pot them if necessary. The house being cleared of bedding plants, the Camellias and Azaleas, if out of bloom, should be syringed morning and evening, and the floors, walls, &c., kept moist, so as to encourage growth. Air should be given early in the morning, but not nearly so much as during other periods, and the house should be closed early. The temperature being 55° at night, and from 75° to 80° by day, your plants will grow freely. They should have plentiful supplies of water when making new growths, also whilst in bloom. When the plants have made a good growth and show their terminal buds, or the Azaleas their points distinctly, discontinue the morning syringing, but continue the sprinkling of the floors, &c., and the evening syringing until the buds are formed, paying particular attention to the giving of air early in the morning, so as to have the foliage dry by the time the sun shines powerfully upon it. This treatment is to be continued until the buds are set, when more air must be given, and the house kept cool and moist, though twice as dry as when the plants were making new growth. They need not interfere with the bedding plants, for both only require protection from frost.

Names of Fruits (*Subscriber, C. P.*).—The Pear, Easter Beurré; the Apple, Court of Wick.

Names of Plants (*Edwin Taylor*).—1, Nephrodium patens; 2, Aspidium coriaceum; 3, Adiantum concinnum; 4, Nephrodium molle. (*G. B.*).—Ageratum glaucum, otherwise Eupatorium nitidum. (*K. T.*).—Dactylis glomerata, var. variegata. (*C. S. P.*).—Solanum ciliatum. (*A Youngster*).—You should send better specimens, and Ferns in fruit only. 1, Eranthemum leuconeurum; 4, Adiantum bispidulum. The other specimens insufficient. (*Pteris*).—1, Lastrea Shepherdii; 2, L. decomposita; 3, Asplenium sp. insufficient; 4, Aspidium coriaceum; 5, Pteris serrulata; 6, Sagenia sp. insufficient for identification. (*F. B.*).—Odontoglossum Ehrenbergii.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending January 22nd.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 16	29.840	29.640	38	25	39	39	N.E.	.00	Clear and frosty; slight snow; overcast.
Thurs. 17	29.536	29.430	34	20	38	38	N.	.00	Partially overcast; frosty; snow flakes falling; fine at night.
Fri. .. 18	29.636	29.447	34	11	38	38	N.	.00	Hazy with small granular snow; slight haze; very fine.
Sat. .. 19	29.810	29.636	35	16	37	38	N.E.	.00	Hazy and frosty; hazy; fine at night.
Sun... 20	29.865	29.862	32	25	37	38	N.E.	.00	Frosty and overcast; overcast throughout.
Mon... 21	29.860	29.815	30	20	37	37	N.E.	.00	Frosty and stormy; boisterous; overcast at night.
Tues. . 22	30.000	29.890	45	21	37	37	E.	.12	Overcast; frosty; overcast; densely overcast, with drops of rain at night.
Mean	29.792	29.674	35.43	19.71	37.57	37.86	..	0.12	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BREEDING GAME FOWLS.

The following observations will apply to almost all the different sorts of poultry in breeding for stock.

The great secret in breeding the best chickens for stock or for exhibition is, where many are kept, to have plenty of good cocks and young cocks, or "stags," as with few cocks and too many hens in proportion, the stock will always become weaker and weaker every year. Where only a few are kept, one good brood cock is only just sufficient for from two to six hens; and where many are kept, there should always be plenty of fine young cocks or "stags" kept running under the brood cocks, and breeding with them, one to every six hens at least, and then all eggs are good for hatching, and all chickens strong, vigorous, and healthy. With the Game more than one brood cock can seldom be kept, and, therefore, young cocks or stags supply the place of more.

Pullets should never be bred from, as they breed small and weak chickens, and their eggs are too small for hatching. Pullets should be kept separate from the breeding stock while breeding, entirely for laying eggs for household consumption, as being excellent winter layers. Stags or young cocks are also worse to breed from than full-grown cocks are; in fact, no fowls should be bred from until they have moulted twice, but where many are kept young cocks must be had instead of more old cocks, which kill one another with their spurs, which stags cannot do.

Good old birds will always breed far better chickens than very young birds will, and if strong and healthy it scarcely matters how old they are; for the younger hens so weaken themselves by frequent laying that their chickens are also weaker, and the older birds are less bred in-and-in than younger birds are, if the stock has been bred in-and-in; besides, the old birds have been proved as good before, which the young ones have not been.

The breeding stock should be selected with great care from the best shaped and strongest full-grown birds (not the largest), and irrespective of age, if only full grown or two years old. The brood cock must be especially good (never a stag), as more depends upon him than upon the hens as a rule.

The birds should be placed together for breeding about Christmas, so as to lay in February and not before, for hatching chickens in the last ten days of March and in the whole of the months of April and May, and not later, March cock chickens and April pullets making the best birds.

Early broods should have most cock chickens, and the later broods most pullets.

The eggs for hatching must be chosen with great care from the most pointed-shaped, smoothest-shelled, freshest-laid, and finest eggs, or eggs rather large or above the middle size, which are the best. The first clutches of eggs laid after moulting, if laid at the proper season, are the best for hatching; the second clutches are also good, but the third and following clutches are worse.

Eleven or twelve eggs should go to each sitting and never more, as a hen cannot brood or bring up more than twelve chickens properly to afford them proper warmth, the brood hens full grown of course.

The sex of eggs, it is said, may be easily ascertained by holding the egg, large end uppermost, to a lighted candle, or to bright sunlight through a chink in a darkish place, when if the air-bladder at the large end of the egg is at the top of the large end the chick is a male, and if at the side of the large end it is a female. In eggs of the same hen the more pointed are males, and the more equal-ended females; but different hens lay different-shaped eggs, the ovarium being of a different shape.

No Game hens should hatch-out chickens before the 21st of March, for fear of cold weather, nor after May, as too late in the year.

Long-shaped eggs are bad, so are too short eggs; small eggs are bad, so are rough-shelled eggs; equal-ended large eggs are also bad, being often double-yolked, and therefore unproductive. Eggs laid after a day's interval are the best for hatching, and all eggs should be marked and dated as soon as laid. The first eggs of each clutch should be rejected as too small, as also those laid after the hen begins to cluck or want to sit, as she then refuses the cock and is becoming unfruitful.

The more cock chickens in the broods the better, as their being numerous shows strength and vigour, and the pullets, though fewer, are always finer and better when there are plenty of cock chickens. At least one-third of each brood should be cock chickens, or the stock and the cocks are too weak and the eggs ill-chosen for hatching.

Crossing different colours in breeding is a very bad plan and only produces mongrel mixtures as a rule. Each colour should be kept separate, if there is room enough. Each colour should be crossed and bred with equally good or superior strains of its own colour, but, of course, as far removed in blood as possible. In breeding and crossing, the cock rules the colour, shape, and qualities more than the hens do, and the best chickens of both sexes take most after the cock, cock chickens more especially so, as a general rule. If crossing colours, therefore, the cock should be of the colour required. If breeding in-and-in put a first-rate old brood cock to your two-year-old hens, or a first-rate two-year-old cock to your best old hens, which will cross them a little. If crossing, breed from the best-shaped and strongest full-grown birds, quite irrespective of age. Spurred hens breed the hardest cocks as a rule. Pinkish-coloured eggs are laid by the red-eyed hens and produce the reddest birds, white eggs by the black-eyed hens, and the yellowish and yellowish-brown eggs by the yellow or daw-eyed hens. These last are the worst eggs. For stock choose red-eyed and black-eyed Game fowls of the very best shape, feather, and blood.

A dry soil and situation should be chosen for breeding, not cold nor too high, and never in the least damp. Wet and damp injure all fowls more than anything. The run should be sheltered from the north, and have sheds for shelter from rains from all quarters, and a little cover for shelter from the sun. A quarter of an acre at least is requisite for a good run, with grass, light gravel, coarse sand, and running water.

Young chickens should be cooped with the hen for the first twenty days, and then be let out to run about with her in fine dry weather, avoiding wet days and heavy dew, during which they should be kept in or near the sheds, and on dry coarse sand or gravel. The April showers are not at all hurtful to them, if not too wet or heavy. The perches should never be higher than 7 feet for Game fowls, and young chickens should not perch too early for fear of crooked breasts, as they are soft-boned. Young chickens should sleep on clean straw in pens, or in a large clean hamper, till of age to perch. The greatest cleanliness must prevail everywhere of course. Unspurred old hens are the best mothers. Game hens are excellent mothers. One level range of the perches is the best arrangement. Perches should be smooth and round, and of the proper size for the feet. Poultry-houses and runs should never be too much crowded.

Game hens average twenty days in hatching, and from their

hot blood often hatch at the end of nineteen days in warm weather. Red wheat and dry stale bread crumbs are the best food for young chickens; for fowls, barley in winter, and oats, peas, rye, and buckwheat at other times. Grass and clean water are great necessaries. Young chickens must have no damp food at all. Game are very hardy, and being hot in blood stand dry cold well. Poultry-houses should be of brick and tiled, not slated, and not too warm. Slate is bad.—NEWMARKET.

BRAHMA POOTRAS AT THE BRISTOL SHOW.

As an old friend, "Y. B. A. Z.," has virtually questioned the decision which gave to me the first prize for Dark Brahma chickens at Bristol, and, in fact, gone out of his way to depreciate my birds wholesale, perhaps I may in justice ask room for a line in defence of my pen, the more so, as I am, though a very old lover of fowls, comparatively a beginner in this breed, and exhibited Brahmas for the first time.

That our "Persian friend" is an admirer of vulture hocks both in theory and practice is well known; and most Brahma breeders also know that he has carried his hobby so far, as, in the opinion of all but those who share his views, nearly to ruin his own yard and some others crossed from it. While this point was yet undecided, while there was a chance of his gaining over the judges to his opinion, he, perhaps, did right to persevere; but now that the matter appears finally disposed of, and it is evident the judges will not have the hock he admires, it is rather hard that he should subject others who have shown more judgment to such one-sided criticism. Certainly any one reading his "Dottings" would suppose the first-prize pen was nearly bare on the shanks! whereas it is the fact that all three birds (which had very good combs indeed), were, and are still, well and fully feathered from hocks to toes!

Here I might stop, the simple fact that two such eminent Judges as Mr. Hewitt and Mr. Douglas placed my birds before a remarkably good and successful pen of Mr. Boyle's, which gained a first prize elsewhere a few days after, being, I should think, quite sufficient answer even to our Persian oracle. To say that I consider myself a good judge of Brahmas, and that I selected this pen with the greatest care, may also be beside the mark, but I will just state in addition to both that several of the most eminent Brahma breeders have complimented me on this my first success, and pronounced the pen by far the best shown this season in the chicken classes, especially in the dark colour of the breasts, which surpassed any birds I have ever seen.

I will only add that "Y. B. A. Z." himself had made several entries, and it was a subject of general inquiry why he did not send his birds. Had he done so we might have seen his notion of a perfect pen. A single cock he did send, but the bird had the misfortune to remain unnoticed.

With regard to the management of the Show generally, I would like to draw attention to the system of judging, which could not be too "highly commended," and which deserves to be universally known and followed. The two Judges were shown into the hall, and the feeder placed at their service to put together for comparison any pens they desired; but no one else, not even the Committee, was allowed. Thus they were enabled to make their awards in peace and quietness, and totally ignorant of and uninfluenced by all local interests. Every judge could testify how his arduous, and often thankless, labour would be facilitated were this admirable plan generally and rigidly adopted.—L. WRIGHT, *Southwell Street, Kingsdown, Bristol.*

THE SECRETARY OF THE POULTRY CLUB.

CONTRARY to my intention I have a word or two further to say concerning Mr. Zurhorst's attack upon me. It is a perfect matter of indifference what notice I had, or what assertions the Secretary may make, regarding my conduct as Honorary Treasurer to the Poultry Club. As I had nothing to clear I wanted no opportunity to clear myself. I asked none, and by what authority Mr. Zurhorst assumes that I had anything to clear I am at a loss to know. Had the resolution at Birmingham been brought forward by any other than a servant of the Club, I might probably have replied to it; but as it was done with no other intention than to annoy and insult me, I declined to notice it. Mr. Zurhorst, when he proposed the resolution, well understood the whole of the affair in question, which, with other matters he has for some time past been writing about, are, I believe, of as great indifference to the members of the Club as they are to me.

To reply further to Mr. Zurhorst's misstatements would take up more space than I choose to ask, and more time than I am agreeable to give. He, Mr. Zurhorst, has now got the Club into the hands he wished.—EDWD. TUDMAN, *Ash Grove, Whitchurch, Salop.*

[We cannot spare any more space for this controversy. It has been throughout one official of the Club insulting the other —"each willing to wound, and yet afraid to strike"—without leading to any result either beneficial to the Club or useful to our readers.—EDS.]

THE DISQUALIFIED GOLDEN-SPANGLED HAMBURGH AT WHITEHAVEN.

I HOPE you will do us the justice to inform your readers all about the disqualified cock at Whitehaven. The cock shown by us never had a hollow in his comb, he never had a large or small piece actually cut out of his comb designedly or otherwise, nor was the place ever sewn up again. Either of the Judges cannot but know, that the cock had never a hollow comb, for Mr. E. Hewitt has judged him seven times, and Mr. R. Teebay six times. To show your readers that the cock could not have had a hollow in the centre of his comb, or anything else to hinder him from prizetaking, we will just mention his career since August, 1866.

The first time he was shown was August 20th, 1866, at Mottram Show, where he took the first prize and premium prize for best pen in the Show, and was pronounced splendid by the Judges, Messrs. Dixon and Hutton. On August 25th at Halifax he was again first, and was pronounced by Mr. Teebay remarkably fine and well meriting the position; August 30th, Penistone, first prize again; September 1st, Keighley, first prize; September 4th, Barnsley, first prize; September 18th, Morley, first prize. Here he was called very good, and pressed closely for the cup. September 20th, Middleton, here to one of the pullets happened a misfortune, and the pen was passed over by the Judges. September 24th, Radcliffe, first prize; October 4th, Farnworth, highly commended, the pullet being out of condition; October 5th, Oswestry, first prize; October 10th, Long Sutton, second prize, Gold and Silver competing together; October 22nd, Wolverhampton, second prize. Some days after this he was sent on approval to Great Malvern, and on his return was on the railway from Saturday morning till Monday at noon without food or water, and was sent on the following morning, November 8th, to Ipswich Show as a single cock, and took the first prize. On December 12th and 13th at Ulverston Show he took the first prize, beating those that had beaten him at Farnworth: December 18th and 19th, Newport, highly commended; January 2nd, Bristol, highly commended; then Whitehaven, disqualified. Thus he made a total of eighteen journeys by rail, having travelled since he was first shown 3050 miles without a day's illness, so we will leave you to judge whether he is a mean bird or not.

As we are charged with having cruelly cut a large piece out of his comb, we shall make our defence, not by falsehood, as your correspondent has done, but by truth, and truth alone. All poultry exhibitors of any experience must know a bird's having travelled upwards of 3000 miles in a lined hamper, and being placed in heated exhibition-rooms, would spring his comb, and give it a tendency to fall over: this was the case, and before sending him to Newport his comb was a little inclined to one side, which we suppose was the cause of his non-success at that Show. On arriving home we put a stitch or two in his comb to hold it in its place whilst it got firm on his head again, and in the hurry he was sent to Bristol Show with the stitches in, and was not disqualified; they were allowed to remain in his comb, and he was sent to Whitehaven as he was, and disqualified. We must, however, say he was not sent to Whitehaven with the stitches in his comb with any intent to defraud or obtain a prize without having merited it, but by mere carelessness or neglect; but we feel hurt when we read that the cock's comb had either been "hollow or too wide, the poor bird's comb had actually had a large piece cut completely out of the centre of it." We wonder what a novice one must be to think of the idea of cutting a large piece out of a cock's comb that had already a hollow in the centre! and it must have been madness on our part to spoil a nice comb by taking a piece out of the centre. The cock is quite good

enough without having a piece taken out of his comb, or any such cruelty. We vouch that he never had a hollow comb, or had a piece taken out. All that was done was the stitch, as already stated; and we will give the person £5 who can show the hollow place in the centre of the comb, or where it has been, from the first time of his being shown to the last.

We do not find fault with the Judges for disqualifying our bird, for we are aware that they were justified in doing so, but we do not like the report, given in your Journal, that we had been so cruel. All that we want at the hands of any Judge at any show that we are exhibiting at is fair play and justice; we do not want a prize given to our fowls except they are worthy of it, and have merited it, and that shall always be the wish of —Samuel & Robert Ashton, *Mottram, Manchester.*

P.S.—Just as we send this to you we received information that our disqualified bird has been awarded the second prize at Kendal, against the best Golden-spangled Hamburgh breeders of the day. This must go to show the correctness of the above statements. At the same time we wish to say that all the stitches have been taken from his comb, and if we mistake not he will puzzle many a good bird before January is out, if justice be done to him, which is all that is wanted by us.

[The statement of Messrs. Samuel & Robert Ashton, in attempted refutation of your report, is certainly somewhat amusing, as perhaps by this act (entirely their own), a more confirmatory document of the cruelty really practised and complained of, on the comb of their Golden-spangled Hamburgh cock, could not have been produced, even had these two gentlemen purposely predetermined it, with the sole view of increasing the exposure of their own misdoings. The Messrs. Ashton refer to the mode of imposition practised as "the stitch;" and again, as one or two stitches, being put into the comb, not "with any intent to defraud, or obtain a prize without having merited it, but by mere carelessness and neglect;" and also that they shall make their defence "not by falsehood, as your correspondent has done, but by truth, and truth alone." Well, then, let the truth, so far as hitherto reserved, be told. At Whitehaven when "disqualified," three stitches were taken out of the cock's comb by Mr. Hewitt, and two by Mr. Teebay. Even then others still remained, and were permitted to do so, purely out of compassion to the feelings of the bird itself, as had ALL the stitches been at that time extracted, most probably the whole of the previous sufferings of this fowl—prior to the confirmed adhesion of the excised part—would have been reproduced, even as at the very beginning.

The Messrs. Ashton, as the owners of the bird, complain bitterly of the statement of your reporter, of their "having been so cruel," adding, "all they want at the hands of any Judge is justice and fair play." Every really conscientious exhibitor will undoubtedly feel grateful to the Judges at Whitehaven, Messrs. Hewitt and Teebay, for the fearless justice and richly-earned disappointment they meted out, as the proper reward of such acts as the Messrs. Ashton thus unblushingly avow themselves to have been guilty of—cruelties, alike incapable of either justification or palliation, and that tend more than all other duplicities put together, to bring discredit on a pursuit, naturally an innocent one, and one at the same time capable of producing both amusement and profit to all classes of society. —The Reporter.]

TAIL OF THE SILVER-SPANGLED HAMBURGH COCK.

I notice in your impression of the 8th inst., a letter from "J. W.," in which he complains of the Hamburgh cup at Leeds being awarded to my Silver-pencilled chickens, on the ground that the cockerel had odd sickle feathers—that is, one sickle was darker than the other, and that I felt "ashamed of the award." I cannot tell how he has come to the conclusion that I was ashamed, as, on the contrary, I feel proud of the achievement, and think this cockerel one of the best I ever exhibited.

Previous to the Show I had several cockerels brought in to choose from, and both myself and man came to the conclusion that he was the best. He caught cold at Leeds, and at Manchester I showed one of his brothers—well, he took the first prize; this pen was claimed. I then showed at Bristol another of the brothers, he also was first, and at Whitehaven I showed another brother, which likewise took the first prize, so that I think myself justified in considering him a good bird. I grant he has odd sickle feathers—that is, one feather silvered more than the other; but one feather being a good one, and the other better, I do not see that this should disqualify him. It is very common for Silver-spangled cocks to have one clear feather in the tail and the other splashed, but this does not disqualify a bird, although it would go against him, if another as good in all points, and superior in this, were opposing him. Now, allowing these odd sickles to be a defect (although the Judges may never have noticed it), I consider the bird in question to be the best shown at Leeds. This is my opinion, and "J. W.," of course, is at liberty to have his own. Still, if he will come over to Goitstock, if not too far, I will try to convince "J. W.," as the bird is now nearly well again, that he is one of the best birds out.—H. Beldon.

THE KENDAL EXHIBITION OF POULTRY AND PIGEONS.

So successful a Show as that which opened on the 17th inst., and closed on the 19th, has never before been held at Kendal. It took place this year in Duckett Mills, a newly-erected building exceedingly well adapted for the purpose, being a very extensive structure, of only a single storey, and well lighted throughout from the roof; in point of fact, nothing could be more desirable. The proprietor, Mr. Medcalf, generously placed it at the disposal of the Kendal Poultry Show Committee, and not only made a donation of three guineas to the funds, but at a considerable outlay made good all the means of access to the mill so perfectly, that even the most fastidious visitor could find nothing to complain of. The weather, as most of our readers might anticipate, was severe in the extreme. Many of the birds were consequently received in sad condition, but the Kendal Committee used every endeavour to revive them, and in many cases very successfully. The variety and liberality of the food provided, merits the highest eulogium. In spite of every effort, however, it was evident to visitors, that many pens of Pigeons and poultry were so far frostbitten during their railway transit to the Show, that it will take some considerable time before their recovery be completed.

There was a very grand display of *Game* fowls; in fact, it was the opinion of the Judges, that so many Black Reds, and of such excellence, had never before been shown at any one meeting. The *Hamburgh* classes were exceedingly interesting, every variety being represented well. Golden-spangled took the Hamburgh cup. Grey as well as White *Dorkings* were well shown; faulty legs and feet, however, seemed to be almost the order of the day, and this failing deprived many otherwise excellent pens of every chance of success. Both the *Brahmas* and *Cochins* mustered strongly, but many of the specimens seemed to be suffering acutely from the severity of the day. The *Bantams* proved a very excellent part of the Exhibition, a great variety of breeds being present. Duckwing Game were the winners of the Bantam cup.

Many of the *Turkeys* and *Ducks* shown were of unusual merit, and the cup for the best pen of Ducks of any kind, again, as at Whitehaven Show, was awarded to the extraordinary pen of Shell Ducks, claimed on that occasion, so that these excellent birds have, besides first prizes, taken two silver cups in a few days. They were much admired. Of Pintails, Widgeons, Carolina Ducks, and Mandarins, there was a good entry.

In *Pigeons*, few shows equal Kendal, as many first-rate birds are kept in the neighbourhood; and as liberal prizes were offered, the competition was severe. It is decidedly best, however, in the case of all Pigeons, to put the water outside the pens, instead of within the wires, as by the latter course the pens become wetted unnecessarily, and the plumage of the inmates soiled in proportion.

Game (Whites and Piles).—First and Cup, J. Fletcher, Stoneclough, near Manchester. Second, J. Brough, Carlisle. Third, H. Thompson, Maiden Hill, Penrith. Commended, W. Wainwright, Stetton-under-Fosse, near Rugby.

Game (Black-breasted and other Reds).—First and Third, J. Fletcher. Highly Commended, H. Thompson; J. H. Wilson, St. Bees. *Chickens.*—First, W. J. Cope, Barnsley. Second, J. Barrow, jun., Kendal. Third, E. Ackroyd, Bradford. Highly Commended, W. Boulton, Dalton in Furness; J. Hodgson, Whittington, Burton, Westmoreland.

Game (Any other variety).—First, J. Fletcher. Second, W. J. Cope. Third, H. Snowdon, Great Horton, Bradford. *Hen.*—First, T. Burgess, Burleydam, Whitchurch. Second, F. Pittis, jun., Newport, I.W. Third, T. Robinson, Ulverston. Highly Commended, T. Wilcock, Morley, Leeds; — Hodgson, Darlington; E. Akroyd. Commended, A. Fenton, Crimble Hall, Rochdale.

Hamburgh (Golden-pencilled).—First and Third, F. Pittis, jun. Second, A. K. Wood, Castle Donnington, near Derby. Highly Commended, R. McGregor, Perth; H. Beldon, Goitstock, Bingley.

Hamburgh (Silver-pencilled).—First, A. K. Wood. Second, W. M. Mann, Kendal. Third, H. Beldon. Highly Commended, J. Robinson, Vale House, near Garstang.

Hamburgh (Golden-spangled).—First and Cup, N. Marlow, Denton, Manchester. Second, S. & R. Ashton, Mottram, near Manchester. Third, J. Ogden, Hollinwood, near Manchester. Highly Commended, T. Burgess; A. K. Wood; J. Buckley, Taunton, near Ashton-under-Lyne; C. W. Brierley, Middleton, Manchester.

Hamburgh (Silver-spangled).—First, A. K. Wood. Second, J. Robinson. Third, H. Beldon. Highly Commended, J. Wright, Keighley; J. Robinson; A. K. Wood.

DORKINGS.—First, W. Copple, Eccleston, Preston. Second, J. Robinson. Third, W. Harvey, Sheffield. Highly Commended, Hon. Mrs. Howard, Kendal; T. Burgess; H. Reldon; W. Copple. Commended, Hon. Mrs. D. Pennant. *Chickens.*—First and Cup, D. Parsons, Cuerden, near Preston. Second, W. W. Ruttledge, Kendal. Third, J. Robinson. Commended, T. Kew, Burton, Westmorland; M. Brooksbank, Manchester.

COCHIN-CHINA (Cinnamon and Buff).—First, R. White, Sheffield. Second, J. Cattell, Birmingham. Third, A. Fenton. Highly Commended, Rev. F. Taylor, Keastwick, Kirkby-Lonsdale; W. Harvey; H. Mapplebeck, Woodfield, Moseley, Birmingham; H. Tomlinson, Birmingham. Commended, J. Poole, Ulverstone; Col. Stuart Wortley.

COCHIN-CHINA (Brown and Partridge-feathered).—First and Cup and Third, A. Fenton. Second, T. Stretch, Ormskirk. Highly Commended, E. Tudmao, Ash Grove, Whitchurch; Miss E. A. Aglionby, Hawkshead.

COCHIN-CHINA (White).—First, R. Smalley, Lancaster. Second, Rev. F. Taylor. Third, Rev. W. J Mellor, Colwick Rectory, near Nottingham. Highly Commended, R. Atkinson, Kirkby-Lonsdale; R. Smalley. Commended, G. Calvert, Darlington; W. F. Dickson, Gill Head, Whitehaven; W. Harvey.

SPANISH (Black).—First and Cup, T. B. Hartley, Heywood, near Manchester. Second, J. H. Wilson. Third, H. Beldon. Highly Commended, J. P. Harrison, Greenside, Kendal; J. Thresh, Bradford. *Chickens.*—First, E. Brown, Sheffield. Second, H. Beldon. Third, Hon. Miss D. Pennant, Penrhyn Castle, Bangor. Highly Commended, A. Fulton, Sedgwick, Milnthorpe; Hon. Miss D. Pennant; W. Harvey.

BRAHMA POOTRAS (Light).—First, H. M. Maynard, Holme Wood, Ryde, I.W. Second, T. J. Harrison, Singleton Park, Kendal. Third, W. H. Heelis, Hawkshead, Windermere.

BRAHMA POOTRAS (Dark).—First, R. W. Boyle, Bray, Co. Wicklow, Ireland. Second, J. Poole. Third, M. M. Brooksbank. Highly Commended, Miss E. A. Aglionby; J. K. Fowler, Aylesbury. Commended, A. Fulton.

FRENCH FOWLS (Houdan, La Flèche, or Crève Cœurs).—First, Col. Stuart Wortley, Grove End Road, London. Second, Rev. G. Hustler, Stillingfleet, Yorkshire. Third, W. A. G. James, Kirkby-Lonsdale.

ANY OTHER DISTINCT VARIETY NOT PREVIOUSLY MENTIONED, EXCEPT BANTAMS.—First, H. Beldon (Silver-spangled Polands). Second, Miss E. A. Whittaker, Belmount, Hawkshead (Cuckoo Dorkings). Third, Col. Stuart Wortley (Guelderland). Highly Commended, T. Wakefield, Golborne, Newton-le-Willows (Black Polands); J. Robinson (White Dorkings); Commended, E. H. Woodcock, Thornhill, Wigan (Silver-spangled Hamburghs and Black Polands); W. Harvey.

SELLING CLASS.—First, C. Garnett, Oxhenholme (Rouen Ducks). Second, J. Thompson, (Black Spanish). Third, R. Smalley (White Cochins). Highly Commended, R. Thompson (Duckwing Game); E. H. Woodcock (Black Polands); T. Pomfret, Preston (Dark Brahmas); T. R. Beetham, Sprint, near Kendal (Slate-coloured Muscovy); H. Thompson (Red Pile Game). Commended, G. H. Roberts, Penwortham, Preston; J. Barrow, jun. (Brown Red Game); E. H. Woodcock; J. Rawlinson, Hawkshead (Silver Grey Dorkings); H. Beldon (Silver-spangled Hamburgh).

GAME BANTAMS (Black-breasted and other Reds).—First, E. Joynson, Liscard, Cheshire. Second, F. Pittis, jun. Third, D. Parsons. Highly Commended, J. W. Morris, Rochdale; Master G. Crosland, Thorns Lane, near Wakefield. Commended, G. Smith, Staveley, near Chesterfield; W. Parker, Clay Cross, Derbyshire; W. H. Butcher, Lea Malt Kilns, Preston.

GAME BANTAMS (Any other variety).—First and Cup, F. Pittis, jun, (Duckwings). Second, Master G. Crosland. Third, Miss E. A. Aglionby. Highly Commended, Master G. Crosland; Master W. Sergeneson, Liverpool.

BANTAMS (Any other variety).—First, W. Cope. Second, H M. Maynard, Ryde, I.W. Third, M. Leno, Markyate Street, near Dunstable. Highly Commended, T. C. Harrison, Hull; J. W. Morris, Rochdale. Commended, J. R. Jessop, Hull; S. R. Ashton; H. Beldon; F. L. Roy, jun., Nenthorn, Kelso; Rev. F. Teale, Gazeley Vicarage, Newmarket.

SINGLE COCKS.

GAME.—First and Cup and Third, C. W. Brierley (Black Red). Second, J. Fletcher. Fourth, J. H. Wilson (Black Red). Highly Commended, J. Fletcher; C. P. Ackers, Bickershaw, near Wigton (Black Red); J. H. Wilson (Black Red). Commended, J. Cope; S. Dupe, Evercreech, Bath; J. Hodgson (Black Red); D. Tait, Hawkshead (Black Red). *Cockerel.*—First, H. Snowdon. Second, F. Sales, Crowle, near Bawtry. Third, J. Wood, Wigan. Fourth, F. A. Astbury, Manchester. Highly Commended, J. Pennington, Birkenhead Park; W. J. Cope.

DORKING.—First, R. D. Holt, Orrest Head, Windermere. Second, O. E. Cresswell, Hounslow. Commended, D. Steel, Windermere; J. Robinson.

GAME BANTAM.—First and Cup and Second, C. W. Brierley. Third, R. Gerrard, Chowbent, Manchester. Highly Commended, Rev. W. J. Mellor. Commended, J. W. Morris, Rochdale; T. Eastham, Preston.

BEST GAME COCKEREL AND PULLET (Any variety).—First and Cup and Third, M. Graham, Kendal. Second, J. Gelderd, Kendal. Highly Commended, R. Woof, Old Hutton. Commended, R. Woof; J. Barrow.

BEST PEN OF HAMBURGHS (Any variety).—First and Cup, T. Suart. Second, S. C. Noble, Kendal (Silver-spangled). Third, H. Arnold (Pencilled). Highly Commended, G. Walker (Silver-spangled). Commended, H. Arnold (Pencilled); S. C. Noble (Silver-spangled).

BEST PEN OF SPANISH (Black).—First, J. Harrison, Cowan Head, Kendal. Second, T. Simpson. Third, J. Goth, Woodside, New Hutton. Highly Commended, J. P. Harrison. Commended, J. Watson

BEST DRAKE AND DUCK (Any breed).—First, W. Willison, Underbarrow. Second, W. Taylor, Kendal. Third, T. J. Harrison.

BEST PEN OF TURKEYS.—First, T. J. Harrison. Second, T. Airey, Crooklands. Third, Mrs. T. N. Clark, Fell End, Witherslack. Highly Commended, R. Noble, Kendal; T. J. Harrison.

DUCKS (White Aylesbury).—First and Third, J. K. Fowler. Second, E. Leech. Commended, J. Robinson.

DUCKS (Rouen).—First, J. Robinson. Second, W. Copple. Third, J. J. Waller, Kendal. Highly Commended, J. Redhead, Kendal. Commended, C. Garnett; T. Burgess.

DUCKS (Any other variety).—First and Cup, C. W. Brierley (Shell Ducks). Second, T. C. Harrison (Mandarin). Third, J. Jennison, Belle Vue, Manchester (Carolinas). Highly Commended, A. Suart, Staveley, near Kendal (Penguin Ducks); F. Pittis, jun. (Buenos Ayrean); A. Fenton (Grey Calls and Buenos Ayrean); J. Jennison (Pintails and Widgeons). Commended, C. W. Wilson, High Park, Kendal (Wild Ducks); H. Beldon (Grey Call).

PIGEONS.

CARRIERS.—First, H. M. Maynard. Second, W. Jackson, Bolton-le-sands. Highly Commended, J. Hawley, Bingley; H. Yardley, Birmingham.

TUMBLERS (Almond).—First, F. Key, Beverley. Second, H. Yardley. Highly Commended, J. Thackray, York; J. Fielding, jun., Rochdale.

TUMBLERS (Any variety).—First, J. Hawley. Second, J. Fielding, jun. Highly Commended, J. Thackray.

OWLS.—First and Second, J. Fielding, jun. Very Highly Commended, J. Thackray. Highly Commended, J. Thompson.

POWTERS AND CROPPERS.—First, W. Harvey. Second, J. Thackray Highly Commended, J. Thackray; H. Yardley.

BARBS.—First, R. Thompson. Second, J. Cragg, Kendal. Highly Commended, J. Fielding, jun.; G. Sturgess, Leicester. Commended, H. Yardley; R. G. Hadwin.

FANTAILS.—First, R. Dodge, Sheffield. Second, J. Thackray. Highly Commended, H. M. Maynard; H. Yardley; F. Waitt. Commended, J. Thackray; J. R. Jessop; H. Arnold, Aikrigg End, Kendal; H. Yardley.

TURBITS.—First, R. Thompson. Second, W. Harvey. Commended, F. Waitt.

TRUMPETERS.—First, R. Dodge. Second, J. J. Wilson, Darlington. Commended, J. Thackray; Rev. W. J. Mellor; G. Sturgess.

JACOBINS.—First and Second, R. Thompson. Highly Commended, J. Thompson; G. Sturgess. Commended, H. Yardley; F. Key; F. Waitt.

ANY OTHER VARIETY.—First, F. Waitt. Second, J. Wainwright. Very Highly Commended, F. Pittis, jun. Highly Commended, J. Thackray; J. W. Thompson, Hull; W. Jackson, Bolton-le-Sands; H. M. Maynard. Commended, J. Thackray; Bowman & Fearon, Whitehaven.

SELLING CLASS (Any variety).—First and Second, W. Harvey (Hyacinths and Priests). Highly Commended, F. Winn, Ullswater, Penrith; J. Walker, Newark; R. Thompson; R. G. Hadwin, Collin Croft, Kendal; R. Smalley, Lancaster; H. M. Maynard; J. Hawley; H. Beldon; J. Thompson; H. Yardley; E. Brown, Sheffield. Commended, W. R. Park, Abbotsmeadow, Melrose; R. Smalley; W. Jackson; C. W. Wilson; J. Thompson; F. Waitt.

Messrs. Edward Hewitt, of Sparkbrook, Birmingham, and Richard Teebay, of Fullwood, near Preston, were the Arbitrators.

THE PHILOPERISTERON SOCIETY'S SHOW.

THE annual Exhibition of Pigeons held in the great hall of the Freemason's Tavern, Great Queen Street, Lincoln's Inn, on the 15th inst., was, as usual, very interesting, and attracted large numbers of Pigeon-fanciers. Carriers were numerously represented by collections of great excellence from Messrs. Date, Square, Else, and Everett; and the Duns, Blacks, and Whites from Messrs. Crossley, Hedley, and Carroll were much admired, as were the beautiful Tumblers exhibited by Mr. Esquilant. A collection of thirty Powters, shown by Mr. Volekman, constituted of themselves a great attraction. The Almonds from Mr. Lucy and Mr. Merck, and the Fantails, Jacobins, Turbits, Magpies, Helmets, and Nuns from Mr. Wicking were of great excellence, and so were the specimens of Almond Baldheads contributed by Mr. Morris. Of Barbs some beautiful Blacks, Reds, and Yellows were exhibited by Mr. Hedley; and Dragons of high excellence were contributed by Mr. Jones Percival and Mr. Crossley, the latter exhibiting the pair of Blue Dragons which took the first prize at Birmingham. Fine specimens of the above and other varieties were contributed by Mr. Thackray, Mr. Betty, and others.

A DAY IN THE RIFLE DRILL HALL, BRISTOL.

WHEN I drew up my blind on Wednesday morning, January 2nd, and saw how the earth was covered with snow, and the atmosphere was filled with it, and how the light had to struggle through clouds as full of snow as a filled sponge with water, I said to myself, "I am very sorry for my Bristol friends, for I fear their Show will be ruined." All Wednesday the weather was bad, traffic was impeded, and none stirred abroad, unless they were driven from home and shelter by dire necessity, save a few snowball-loving boys, and they, too, were obeying the law of necessity, for youth and health tingling to the fingers' tips prompt mirth and mischief.

Thursday morning, however, broke fine and clear, no more snow had fallen, and a frost on snow makes it dry and crisp, altogether a different and less-dreaded material to snow in its new-fallen, light, wet, and boot-soaking condition. This cheered me, for I saw more hope of people getting out to a poultry show. Forth I went, enlivened by the air and the bright day.

As I travelled on I could but notice the transforming power of snow, how it so masks Nature that one loses oneself even in tolerably well-known roads. The seasons, indeed, alter a scene, but snow makes it altogether a new scene—it thoroughly disguises the face of dame Nature; earth white and all alike, trees standing up black and frowning. Bristol, not too clean, but still a most interesting city, reached at last, and its narrow streets threaded, its docks passed, and draw-bridge crossed.

College Green, to my left, alive with sliders, and beyond it the cathedral, now restored, but still how inferior to the church of St. Mary Redcliffe. What a city rich in architecture, to possess both a cathedral and, perhaps, the very finest parish church in England! I think of Chatterton, Southey, Coleridge, and, greater than all, Bishop Butler, the author of the wonderful "Analogy."

Pressing on I am at the foot of Park Street, a fearful hill always, but now doubly fearful with the frost. I see before me carts locked together; horses, whose careless owners had not caused their shoes to be roughed, putting out all their strength to drag forward heavy vehicles, but strength only ending in slipping and no advance; foot-passengers here and there falling, if ladies, to the infinite damage of their chignons. Soon, but not very soon, I am at the top of this hilly, slippery street, and alight in front of a new building to my right, and, after walking down a corridor, I am in the Rifle Drill Hall.

First, I would remark, that the situation of this hall is admirably fitted for a Bristol and Clifton show, as it stands midway between the two places. It is convenient both for Bristol citizens and Clifton residents. It is no long walk for the Bristol man of business or fowl-loving artisan, and the daintiest Clifton boot can reach the hall unsoiled by city mud. So much for its situation; as much may be said for its interior capabilities. It is large, nearly square, the roof supported by light iron arches, the lighting admirable, and, gas being burnt, the temperature was most agreeable to man and bird.

The arrangements of the Show were excellent, and must have cost the Committee, all amateurs, much thought and work. I walked round and round trying to see where I could suggest improvements; but I am unable to suggest one, and as to blots there were none to hit. The pens were good and large, the space between the rows was ample, more room being given than is usual, neither were the pens so high as to preclude a view of the hall, or of one's friends in other parts of the building. Not unfrequently the pens are so high that I feel as if walking between two fen banks. Then across the two ends were the Bantam pens; this was a very good arrangement. These little fowls look best when separated from the larger birds, and as one came down each row, there, full before one, was the whole range of the fairies; this was a very pretty feature. Along the side wall were benches with backs, and between each two benches a large evergreen plant or tree. Then above floated numerous flags and many twinkling points of flame, which raised the temperature so pleasantly. In one corner was a refreshment stall, where the viands were not dear and *were* good, and the proprietor need not read "The Boy at Mugby" in "Mugby Junction." Standing at the refreshment counter one saw the hall to full advantage, and though fully remembering other shows and my pleasure at them, yet I must dub this as the very prettiest and best-arranged winter show at which I ever was present. We had light, warmth, good taste, and nearly eight hundred pens of poultry. Owing to the pleasant temperature the birds did not mope in corners with hanging heads and ruffled plumage, but showed to advantage.

It will be needless for me to repeat the prize list, rather I will mention any features of the Show which seem to me to demand particular notice. First, a word about the Spanish. I was prepared to expect much at Bristol in this class, knowing who resided in and near; but the excellence of the birds surprised me. The chickens, especially, were deserving of an emphatic "Most excellent;" they belonged to Messrs. Parsley, Roué, Lane, and Jones.

Lady Holmesdale carried off, to add to her many cups, one, I think, better than any her ladyship previously possessed —viz., the cup of the Show; but it was not won easily; other pens were nearly if not altogether, to some judgments, quite equal to hers. The first-prize White Cochins were again most admirable; I could scarcely leave the pen. The Partridge Cochins were again extremely good; next to the Spanish I preferred this class. The third-prize pen of Light Brahmas bore a ticket stating "These birds have been purchased by Her Majesty." The Game were of varied goodness, some even not dubbed. But, well! they paid their entrance money; but why will people send birds to be laughed at? I was able to feel Mr. Fletcher's first-prize hen as she passed close to my hand, and the hardness of feather was wonderful.

It was really quite pleasant to see so many pens of Polish, birds always attractive at a show; may I beg many a breeder to have at least one sitting of eggs this spring?

Among the more recently imported varieties I would decidedly state that the Houdan is much the handsomest breed, and worthy of becoming more generally known; by the way, it might be well to print the names of these new kinds in the catalogue.

The Bantams, seen so well at this Show, were also well worth seeing. The first-prize Duckwings were admirable; and Mr. Cambridge's Blacks were first, and the cock, perhaps, the very best I ever saw. It pleased me to see the old-fashioned Speckled Booted. Horace Walpole frequently mentions, "I first fed my Bantams." He was an early riser, and I apprehend his were these Booted Speckled—the best known in the last century. Let me press upon readers having but a small yard or garden to go in this year for Bantams; nothing is a prettier pet.

Ducks, Geese, and Turkeys—happy Geese and Turkeys to have survived Christmas—abounded. The Brown Call Ducks pleased me extremely, perhaps the prettiest of the smaller Ducks, though apt, if allowed to fly, to be shot by mistake for wild Ducks. The little Blacks are very nice for a small piece of water, and may be kept like Bantams where larger birds are unsuitable.

I spent the chief part of a too-brief winter's day in the Rifle Hall, and though I have no blot to hit nor improvement in arrangement to point out, yet I would in conclusion remark, that the first few days in the New Year are not good days for exhibitions; people's heads are full of visiting, Christmas is scarcely gone, indeed, I found that neither lectures nor penny readings were well attended so soon in the year; Paterfamilias is also grumpy, owing to those bills, always larger than he expected, and instead of, as at other times, fobbing out five shillings with a smile for all his family to go to the poultry show, he, with the youngest in his hand, now says, "No, girls, we must economise; think of what those bonnets of yours cost me." This is all I can suggest, as the Secretary told me there were to be Pigeons next year—Pigeons that cost so little for carriage, that a great number may always be relied upon as sure to be sent. Trusting that the Bristol Show may be an annual one, and ever be well attended, I heartily thank the Committee for the pleasure they have given me.—Wiltshire Rector.

AMERICAN BEE-KEEPERS' INSTITUTE.

A Bee-keepers' Institute has been established on Kelly's Island in the state of Ohio, where an association which claims to be "composed of the best apiculturists" proposes for "a small compensation" to educate its patrons in the science and art of bee culture. Advantage has also been taken of its position to introduce the Italian bee into Kelly's Island, where it is stated to be separated by a distance of twelve miles from any native bees. Queens of this variety are advertised for sale at eight dollars (about £1 13*s*.) each, with a reduction on taking a quantity.

SHIFTING STOCK HIVES.

One of the most important principles to be attended to in practical bee-keeping is, Never to shift stock hives, but to allow them to remain, as De Gelieu says, "fixed to the spot as the ancient oaks." Many people imagine they may be safely moved a few miles in winter, but in my opinion, this is a very improper time to change their situation. However gently handled, a certain amount of disturbance necessarily takes place, and then the bees, which were previously inactive, begin to consume food, which will inevitably be attended with evil if the weather be such as to confine them to their habitations for any length of time. Of this I have had indubitable evidence on several occasions.

Two years ago, on a comparatively mild day in January, I had a hive in excellent condition carefully conveyed on a pole by two men to the distance of a mile, but the commotion induced by the carriage made itself felt during the remainder of the season. On account of the inclement weather that followed, the bees were unable to leave their hive for several weeks, and the frequency with which they approached the entrance without daring to venture out, showed the deep distress they were in. Numbers fell down on the floor-board and died; those that did go out never returned, and in a short period every bee would have perished had not an exceptionally fine day seasonably arrived, which permitted an airing to be taken. Other hives which had not been interfered with did not appear to suffer in the least during the period of confinement referred to.

On another occasion, peculiar circumstances led me to rouse a hive into complete activity about the beginning of December,

It was a remarkably strong stock, and appeared capable of standing the severest weather. If egress had been possible, I have no doubt it would have done well, but a period of chilly ungenial weather set in, the temperature gradually fell, and very few of the bees which came out of the hive were able to return to it. About the middle of February following the thermometer indicated 18° of frost, and as the bees by that time were filled to repletion, they could no longer take in more food so as to enable them to keep up the requisite degree of warmth in their hive. The consequence was the death, in one night, of nearly five thousand bees still attached to each other in a cluster.

Such are the evils which I have observed to follow on an unseasonable interference with stocks; but even when a hive is removed in the winter season to a strange place, and in the gentlest possible manner, vast numbers of the population perish if a fine day do not immediately follow, so as to tempt the inmates to come out in a body; for if they leave the hive singly or by twos and threes, they generally do so without taking much notice of the aperture to their houses, and as they fly about for some time without being able to find it, they soon become benumbed, and so fall down and die. Not one in a hundred when the temperature is low can make its way back to its home after removal to a new locality; for the place is strange, a considerable time has to elapse ere a sufficient survey of it can be taken, and there are very few days in the winter months when bees can with safety linger much more than a minute or two out of doors. It is different when the day subsequent to removal is genial and fine. They then come out in such numbers as to make an inexperienced person believe they are going to swarm, and as they crowd around the entrance, those on the wing examining the new situation are at once directed to the home which they might not otherwise have found.

With these facts many bee-keepers must be well acquainted, and it is only for the benefit of novices I state them. I would, therefore, tender this advice, Never to remove stocks to either a short or a long distance during the months of December, January, and February, or if you do, let it be early in the forenoon, and on a day when, about noon, in their new situation the bees may with safety be allowed to go abroad.—R. S.

OUR LETTER BOX.

Hen's Abdomen Swollen (*Tycho*).—If the hen you mention first be a Spanish hen, it is the beginning of an incurable malady; in all cases such attacks are incurable, but very often they do not interfere with the usefulness of the bird. We cannot guess at the cause of illness in the two pullets, but eating snow sometimes causes strange maladies.

Promoting Laying (*Novice*).—Very few fowls lay in this weather. Cooked meat chopped fine, bread soaked in ale, and ground oats mixed with milk, tallow chandlers' greaves soaked in boiling water, a little hempseed, are all stimulating food, and tend to make fowls lay, but they injure the birds.

Game Fowls with Different-coloured Legs (*Scot*).—If the pen included none but the finest and best birds that were ever seen or bred it could not compete, as the difference in the colour of the legs is a positive disqualification. It used to occur at the shows in this country formerly, but of late we have never seen it.

Height of Inclosure (*Suffolk Subscriber*).—A fence 5 feet high will keep almost any fowls within bounds, unless they are tempted by something on the other side which their confinement does not afford; but even then they will seldom attempt it, more especially if the fence is made to slope inwards.

Houdans Confined (*Idem*).—Houdans do as well in confinement as at liberty, and a four-feet fence will keep them in.

Pheasants Confined (*Idem*).—Common Pheasants bear confinement well, and can be profitably kept. No license is required for selling their produce.

Dubbing Game Bantam Cocks (*Gallus*).—They, as well as Game cocks, may be dubbed at from five to seven months old. The best way is to use a pair of curved scissors, and to cut from the back of the skull to the nostril, keeping so close as to leave no comb whatever, but taking care not to expose the skull. Afterwards remove the gills and deaf ears with the same instrument. Other birds than we have mentioned may of course be dubbed, but not younger ones, as, if the operation is performed too early, the combs grow after it, and it again becomes necessary.

Detecting Fertile Eggs (*C. S.*).—We can tell you of no way of testing the fertility of eggs till they have been sat upon for a few days. Take an egg that has been sat upon five days, and, choosing the strongest light you can, sunlight if possible, place yourself in a dark house, and open a chink of the door to admit a small strong ray. Then hold the egg between the thumb and finger of the left hand, while with the right you form a telescope, as it were, and fixing it close to the eye at one end, if you press the egg against the other, no light will be admitted save through the egg, and if it be fertile you will after five days' incubation distinctly see the streak of blood in the yolk. This is the first formation of the chicken. If the egg is quite clear there is no life in it; at a later period the eggs show by motion when they are put in warm water.

Fowls with Disordered Throats (*D. G.*).—To your fowls which make a hiccoughing noise give some bread and strong beer. They are suffering from cold.

Number of Eggs a Hen Lays (*T.*).—The number of eggs laid by a hen is not affected by the cock, but, as a whole, the hens do better, even if there be but one cock to twenty hens. We do not know the price of feathers.

Geese with Long-projecting Feathers (*E. N.*).—Your Geese are either Sebastopol or crossed with that breed. The pure bird is very beautiful, generally white and covered with long curling feathers, but they are not very heavy. That is our reason for thinking yours are not pure.

Mixture of White and Buff Cochin-Chinas (*D. M., Glasgow*).—We are unable to say what colour the produce of the cross would be, but it has always been said the Black Cochins were produced in that way. It is certain they could not be continued on account of their eccentricities in the way of colour.

Poultry for a Small Yard (*M. A. Healey*).—Any of the dark varieties of Cochin-Chinas or Brahma Pootras will suit you.

Handling Poultry at Sales (*W. H. M.*).—There is no rule that we know either sanctioning or forbidding the practice. The safest way would be not to have a bird taken out or put into a basket, except by an attendant appointed by the auctioneer.

Dorkings (*Nemo*).—If we were about keeping Dorkings we should purchase pullets and a cock, either at one of the exhibitions or at a sale at Mr. Stevens's, King Street, Covent Garden, taking care not to have them a brother and sisters.

Good Intention.—If "*Inquirer*" will enclose to us a stamped envelope with his direction we will send him the address of a lady who will meet his wishes as far as her stock of the various fowls will allow.

Fern Cloths (*J. J. S.*).—We have seen ferns printed in black on a white ground, but never white on a black ground. It must be effected in the dying.

Crève Cœurs at Shoreham Show.—In the prize list of the Shoreham Poultry Show you gave me credit for taking the second prize for Game Bantams, which is a mistake, but I had the second prize for Crève Cœurs. —J. C. Phair.

Flight Feathers of an Owl Pigeon (*Elms*).—The flight feathers should not be of the same colour as the wing bars, but of the same colour as the body of the Pigeon—thus: in Blue Owls blue, in Silver Owls silver.

Food for Game Fowls (*Bosch*).—Feeding on Peas is said to be best for hardening the flesh and feather. Barley is best for cold winter weather, as being the warmest food. For warm summer weather red wheat, oats, rye, buckwheat, or brank, is best; the latter is also good for winter feeding. I feed my Game fowls on barley in winter, and on barley and red wheat in summer. The hardness of feather and flesh, or what is termed "good condition," of course, greatly depends upon the strain or breed of birds kept. No good feeding can make soft birds hard, and good condition also greatly depends upon a good healthy country walk and great cleanliness, as bad walks often spoil good birds. My articles in this Journal begin with the Number of September 18th, 1866; pages 321, 415, and 436, give other information such as is required by "*Bosch*."—"Newmarket."

Poultry Keeping (*M. I. E.*).—To answer all your queries would fill a column of our Journal. If you enclose seven postage stamps with your address, and order "The Poultry Book," it will be sent to you free by post. It contains all the information you ask for, and much more that will be useful to you.

Bird Dealers (*I. S. R. D.*).—In answer to your application we give the following:—Mr. Hawkins, Bear Street, Leicester Square; Mr. Judd, 25, Newington Butts; Mr. Fraser, The Green, Knightsbridge; Mr. Isaacs, 32, Prince's Street, Leicester Square; Mr. Jamrach, 180, St. George Street, E.; Mr. Rice, 156, St. George Street, E.

Maggots in Combs—Breeding in Supers—Storing Combs (*E. B.*).—You should go over the combs carefully, and pick out and destroy every maggot, or the combs may be entirely destroyed before the time comes for making use of them. You run no risk in trying to utilise these combs after destroying the worms, for if they are too far gone to be available the bees will soon make an end of them. Queens are not so prone to breed in supers when the communication with the stock hive is at the sides only. It is said that queens may be entirely excluded from supers by the communication being restricted to narrow slits one-fifth of an inch wide. We should be glad if any of our readers who have tried this plan would communicate the results of their experience. We do not imagine that any one sells wire suited for drone traps, but believe you must get it made purposely for you. Empty combs after having been carefully inspected, to make sure that they are free from wax moth, should be wrapped in paper and put away in a box or drawer in a perfectly dry place.

Packing Eggs for Travelling (*Spangled Hamburgh*).—We cannot reply better than by quoting the following from "The Poultry-Keeper's Manual," published at our office:—"We know of thirteen eggs which, after journeying 360 miles (from Winchester to Kendal), produced nine chickens. They were in a strong box, 2 inches of bran at the bottom, then an inch layer of oats, on this the eggs were laid on their sides, covered an inch deep with oats, and then 2 inches deep of bran. A gentleman of much experience wrote as follows to us on this subject:—'As an experiment to test my mode of packing eggs, I sent five eggs more than 170 miles by railway; they were absent three days, and twice travelled through London in the railway van. On their return they were placed with some other eggs under a hen, and four out of the five eggs were duly hatched. These eggs were carefully packed, and the lid of the box screwed down. The only objection to oats, as a packing material, is, that sometimes, but very rarely, an egg may be pierced with the sharp end of an oat; I have only known, however, one or two instances of such an accident. The plan I now adopt in packing eggs is to wrap each egg in several folds of newspaper, and then place a thick layer of cotton-wool and straw cut to the length of the box, both under and over the eggs, filling up every interstice with pledgets of cotton-wool. This plan prevents any chance of the eggs being broken, and preserves their vitality as well as is done by the oats. There is one thing I invariably do, and I think ought to be done by every one who sells eggs for sittings, and that is to write on each egg, legibly with a pencil, the date on which it was laid. Egg-boxes should invariably have their lids screwed down. I have constantly received boxes of valuable eggs, of which not one has hatched, and, I believe, solely in consequence of the lids being nailed down, the jar of the hammer destroying the vitality of the egg. No eggs should be packed in sawdust, nor should eggs more than ten days old be sent to any distance.'"

WEEKLY CALENDAR.

Day of Month	Day of Week.	JAN. 31—FEB. 6, 1867.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
31	Th	Erica coccinea.	44.4	30.2	37.3	18	43 af 7	44 af 4	16 af 4	13 af 1	25	13 41	31
1	F	Acacia uncinata.	43.7	31.3	37.5	12	41 7	46 4	6 5	0 2	26	13 50	32
2	S	Purification. Candlemas Day.	44.2	31.4	37.8	14	40 7	48 4	51 5	54 2	27	13 58	33
3	Sun	4 Sunday after Epiphany.	44.7	30.9	37.8	19	38 7	50 4	31 6	53 3	28	14 5	34
4	M	Acacia grandis.	44.7	32.8	38.7	18	37 7	52 4	6 7	56 4	●	14 11	35
5	Tu	Acacia Drummondi.	45.4	33.5	39.4	18	35 7	54 4	38 7	2 6	1	14 16	36
6	W	Azaleas.	46.1	32.5	39.3	20	34 7	55 4	7 8	10 7	2	14 20	37

From observations taken near London during the last forty years, the average day temperature of the week is 44.7°; and its night temperature 31.8°. The greatest heat was 57°, on the 1st, 1852; and 3rd, 1850; and the lowest cold 8°, on the 31st, 1857. The greatest fall of rain was 0.75 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

NEW AND BEAUTIFUL PLANTS,

RECENTLY INTRODUCED.

BEAUTIFUL as many of the stove plants are that have been distributed to the public by Messrs. Veitch and Sons during the last year or two, there is none more effective and useful than

Begonia Pearcei.—This very beautiful species is botanically allied to B. cinnabarina, and it was introduced from La Paz by Mr. Pearce. It possesses the double quality of having both beautiful leaves and large showy flowers; the plant has also a very desirable habit. The foliage is very pretty, the upper surface being of a dark velvety green, traversed by pale straw-coloured veins, and the under side of a dull red colour. The flowers are large, bright yellow, and borne on slender stalks in clusters of two or three. Sometimes only one flower is borne on a peduncle, when this is the case the flower is very much larger; some which I have seen were as large as a five-shilling piece.

I have no doubt that this beautiful Begonia may be had in bloom all the year round, if care be taken in propagating and resting the plants at the proper time; and, as the flower-trusses are produced in large numbers and the colour of the flowers is rich, it will be found invaluable both for summer and winter decoration. The plant thrives well in a mixture of peat, leaf soil, loam, and silver sand, and is easily propagated by cuttings or leaves.

To have it in bloom throughout the year it will be necessary to propagate plants every two months. The young plants should be grown in a brisk temperature, and as near the glass as possible. As soon as they have become well established in their pots, a little weak manure water will assist them very much if given once or twice a-week: a well-grown plant in a 48-sized pot will afford a constant succession of bloom for three months. After the plants have done flowering water should be withheld for a period of three or four weeks, when they may be gradually started into growth again, so that, after two or three dozen plants have been propagated, there may be a constant succession of beautiful flowering specimens.

For drawing-room decoration I know of no more useful plant, as the flowers do not fade very soon, and if small examples are used for this purpose they will be found invaluable. I have great pleasure in recommending this beautiful plant for all purposes.

Primula cortusoides amœna is another most welcome addition to our stock of plants for spring and early summer decoration. This plant appears to be nearly if not quite hardy, the flowers are produced on slender stems, and form large umbels several inches in diameter, which are borne well above the foliage; the colour of the flower is a rich rosy purple. This is one of the beautiful plants introduced by Mr. J. G. Veitch from Japan. It is propagated by dividing the roots. A good, yellow, sandy loam, with a little leaf soil, appears to suit it well. The plants must be grown in a cool frame or pit, and be fully exposed for two or three months after the flowering season, and the pots should be plunged in some material to keep the roots cool and moist during the summer.

I have no doubt this beautiful Primula will soon be followed by others equally good in various shades of colour. It is to be hoped that the plant will produce seed as freely as the original species; if so, there will be a wide field for its improvement, and a few years will, doubtless, bring us as many and varied forms of this valuable species as there now exist of the rapidly increasing section of the Chinese Primulas. I have not yet seen the seed of this beautiful Primula advertised, but it is to be hoped Messrs. Veitch will soon be able to distribute it to the public.

Urceolina aurea is a beautiful, very graceful Amaryllidaceous plant, requiring the same treatment as Eucharis amazonica. It has broadly ovate leaves like the above, and a tall scape supporting an umbel of gracefully drooping bright yellow flowers tipped with green. The plant is propagated by offsets.

Manettia micans.—A valuable stove climber, with rich, glossy, dark green foliage, and producing its bright reddish orange-coloured flowers very profusely during the whole winter. The plant is a vigorous grower, and valuable on account of its quick growth for covering pillars, &c.

Bignonia argyreo-violascens is a pretty variegated stove climber, with shaded purple and white leaves. The young foliage is beautifully coloured with various shades of lilac and purple; it is very distinct and striking, and forms an admirable contrast with the green and glossy leaves of Manettia micans.—J. Wills.

(To be continued.)

DANGER FROM ACCUMULATED HEAT.

The recent fire in the Crystal Palace, which all must regret, reminds me of a subject which has long occupied my mind, and that is accumulated heat. Almost every year we hear of some fine building in danger or destroyed by fire, and the same reason given—namely, overheated flues. Of course, if this is the cause in all cases, the persons having the charge of the fires are to blame; and one may imagine with what feelings they will be regarded by those who have lost their home, and many of home's treasures. I do not believe, however, those who have charge of such heating apparatus are in all cases or generally to blame.

If a hot flue be surrounded in such a way that the heat cannot readily escape, and it be kept constantly hot, this heat must accumulate. There is a general idea that if a flue does not touch wood or other inflammable substance a fire cannot take place:—no idea can be more erroneous. A hot flue is constantly receiving heat; if surrounded by non-conducting but inflammable substances the heat must accumulate, and may reach the point at which ignition takes place. Besides, it is well known that wood constantly subjected to heat becomes more and more inflammable.

I have heard that a large warehouse in Manchester was very nearly being burnt down from a quantity of cotton being laid against the wall of a room, on the other side of which was a fire kept burning night and day. My own house was in danger of being burnt, and, in fact, was on fire from this cause—accumulated heat.

In consequence of the sickness of one of my children a good fire was kept up in a bedroom night and day for some weeks; the fireplace was a rather low one, and the hearthstone, a large and thick stone, was laid upon the beams which carried the floor; of course the bottom side of these beams was covered by the ceiling of the room below. No fire touched the hearthstone, the bottom of the fire was a foot above it, yet, on a burning smell being perceived, search was made, and the wood was found on fire, and only air was wanted to produce flame.

My attention was first directed to this subject more than twenty years since in the following manner:—Having a flue running through a greenhouse I thought to make a hotbed for striking cuttings over it; so I built a wall in front of it some 18 inches or 2 feet higher than the flue, and laid some pieces of wood across, which were covered with slates, on which was placed a bed of leaves. I had as nice a hotbed as could be desired, and all went on well till one morning I found the place on fire, and all the plants killed. The thick bed of leaves prevented the escape of heat in anything like the proportion in which it was given out by the hot flue: hence the accident.

In warming an old house by flues it is almost impossible for the architect to know the position of every piece of wood; and even in a new house hot water would be much safer. There is an old saying, that experience is of no value till it is paid for, but a fire in one's dwelling-house is too great a price to pay for knowledge, so I hope these hints will be useful.—J. R. Pearson, *Chilwell.*

WHAT IS A GOOD CROP OF STRAWBERRIES?

May I suggest an answer to the above question as a very important item in the consideration of the particular aspect of Strawberry culture, discussed of late in the pages of the Journal? Could "J. T.," or others, state definitely that in such a year, from so many square yards of land, there were gathered so many pounds weight of Wonderful, and from some other number of square yards in the same field, so many pounds of Frogmore Late Pine, the question of the relative cropping of these two varieties would be reduced to the best of all tests—an arithmetical calculation. Given a certain soil, season, situation, and mode of planting we should have determined positively for us which of these two sorts excelled the other in cropping, and to what extent. Presuming the time and course of ripening of the two were identical, the comparative value of, perhaps, a better crop in one to a superior flavour in the other, would remain to be estimated, and this done, we should have ascertained a fact to be remembered so long as Frogmore Late Pine or Wonderful was worthy of a place in our catalogues. Had your correspondent Mr. John May, March 20th, 1866, only told us the distance between the rows, and between the plants in the rows, from which he gathered 96 lbs. of fruit, how valuable it would have been to have had such a standard to test our results! If Mr. May's 144 plants produce 96 lbs. and mine only 45 lbs., I at once understand that my system of Strawberry culture wants reforming; yet here we are, hundreds of fragarians, congratulating ourselves and neighbours upon magnificent crops, while one and all of us are positively ignorant of what really constitutes a crop worth growing!

Fruit-farmers who have kept their books well could furnish us with much in this direction, both of interest and value. Till they do so, let some of us, who have time to spare, devote an hour or two in the coming season to weighing, as accurately as the blackbirds will allow us, the crop produced on any convenient plot completely under our own supervision. As an estimate of what even in ordinary culture may be expected, I may remark that a crop of 10,800 lbs. per acre, or nearly 2¼ lbs. per square yard, is certified to have been produced in the State of Maine, U.S. I believe it will be found that our best English growers far exceed this; how far, it is worth a little trouble to ascertain.

May I suggest, without seeming over-critical, that in the question of produce generally there is a degree of looseness of statement which our good friends the agriculturists have long since ceased to tolerate? When the cropping-merits of a new Potato or other vegetable are boasted of, let its admirer, when speaking of its wonderful crop, tell us also something of the weight and scales he measured it by. I do not mean that anyone wilfully mis-states, but when one of those earliest of all Peas is fit for the table on some early day in May, it would add to our interest to know the length of the row, the number of the pods, and the gross weight of the whole—say even the number of Peas.

Seriously, let us apply this matter of weight and scales to a question which was lately adverted to in your columns. If Mona's Pride be ten days earlier than the Ashleaf, the sooner we all have it in our gardens the better. I saw it hinted the other day that the Ashleaf was considerably the earlier of the two. Now, who is right? Every one speaks out tolerably strongly, but on what basis? What of the scales and weights? Let us settle this before another season passes over. Given, fifty sets of each sort of like average size, planted on the same day, let ten plants of each be lifted on the 15th of May, their produce weighed, and all tubers above 2 ozs. counted. Repeat this every five days, and by the middle of June each grower, for himself at least, may determine whether, in the event of the spring of 1867 being an average one, he should or should not continue to grow the variety in question; and something like this was just what the introducer of Mona's Pride was morally bound to do for his constituents, and to publish the results, before presuming (if he did presume), to offer it at 5*s.* per peck.—S. E. T.

CONFLICTING HORTICULTURAL EXHIBITIONS.

I am glad to see that Mr. D. Thomson has directed attention to the unfortunate circumstance that the days selected by the Royal Horticultural Society for holding their large show next summer are the same that had previously been fixed upon for holding the great National Show at Manchester.

It has long been known that such a show would be held at Manchester in the summer of 1867; it has been noticed by the press, both editorially and by correspondents, and it is impossible to believe that any of the great Societies could be ignorant of the fact of the show itself, or of the dates on which it was to be held.

As the Royal Horticultural Society, in particular, have for their object the advancement of horticulture, it is a pity that they should so arrange their programme that the principal show in London should come in direct collision with what is likely to be the most extensive one held in the provinces. Exhibitors may be anxious to contribute to the Manchester National Show, and at the same time be desirous to let their plants, &c., be seen at South Kensington as usual. This might have been done if the Royal Horticultural Society had fixed upon a different date from that already occupied.

Many visitors will be desirous of witnessing the National Show as a first attempt at a long-continued exhibition in the provinces, and at the same time they will not like to miss the metropolitan show. Now, they must ultimately sacrifice the one or the other. This unpleasant circumstance arises from want of circumspection in those who arrange for the shows of the Royal Horticultural Society.—T. Jones, *Rusholme.*

[It is very unfortunate that the two great exhibitions of the Royal Horticultural and the Manchester Society should be held so near together, as the circumstance will, no doubt, cause great inconvenience to many, and disappointment to others who would be desirous of exhibiting at both places; but we are sure that it was not with any idea of interfering with the interests of any other society that the Royal Horticultural selected the period they have done for holding their show. For some years past the Council have chosen the week between the Derby and Ascot races as that in which to hold their great exhibition of the season; and as the Derby day this year falls on the 5th of June, had the Council adhered to their usual date the exhibition would have opened on the 12th, at the very time when the Manchester Show is open. We do not know what may have induced the change, but we should imagine that the Manchester Society having adopted the week of the Royal Horticultural may have induced the Council to hold their Show a week earlier to secure the time when London is full, instead of waiting till after the close of the Manchester Exhibition, when numerous visitors, whose attendance they might reasonably have expected to secure, will have left. It appears that the want of circumspection rests more with the Manchester Committee, who should first have ascertained

whether they were not taking possession of a date which was known to be that on which the Royal Horticultural Society usually held their great summer exhibition.]

NOTES OF AND ABOUT ROSES.

(*Continued from page* 47.)

5. Exhibition.—Public exhibitions of any flower afford a powerful stimulus to an improved culture of it; they also tend to spread abroad a more general knowledge of it, to raise it in the estimation of those who do not make it an especial object of cultivation, and, by bringing together specimens grown in different localities and on different soils, offer a ready means of comparison under different circumstances to those who do. This is pre-eminently the case with the Rose. There has never been a public exhibition of any particular flower that has attracted more spectators, excited more interest, or engaged so many persons in making it. It is, therefore, a matter of some importance that Rose shows should be so managed that the confidence of exhibitors should be secured, the excellence of their productions fairly and impartially recognised, and that the crowds of admiring visitors who throng them should be able to inspect the stands with as little inconvenience as possible, and without disappointment. These conditions secured in the main, Rose shows will continue to flourish for years to come.

It would be saying too much to affirm that these conditions are fulfilled, it would be equally wrong to assert that they are not. There is, therefore, a *media via*, which, though as stated of old, the safest, is wide enough,nevertheless, to admit of discussion, with a view of testing the soundness of what is believed to be good, and remedying what is thought to be defective. *Quot homines tot sententiæ*. Inviting the opinions of other correspondents interested in this subject, let us endeavour to discuss it calmly, without prejudice, and in a friendly manner. We may then hope to effect improvements where needed.

Rose shows have been found to be paying-exhibitions; the very important consideration of ways and means is hence set at rest. The next prominent points are the schedules, rules to be observed by exhibitors, and the judging of the specimens exhibited, to which may be added, as materially influencing success, the most appropriate time for holding the exhibition.

An equitable adjustment of the classes to the capacity of the various growers ought to be a primary consideration in compiling the schedules. I have before me most of the schedules of the Royal Horticultural Society, and of the Crystal Palace Company, for the years from 1861 to 1866; also, the list of awards, with two exceptions, of the latter, for the same period. For the earliest of these years the two schedules were nearly alike, differing only in the number of trusses required in the highest class for amateurs, being twelve more in the schedule of the Royal Horticultural Society than in that of the Crystal Palace Company, and this difference has been maintained ever since. There were also three classes in the former not inserted in the latter—namely, twelve trusses of Senateur Vaisse (open), twelve of any other kind (open), and eighteen of Tea-scented. After that year the divergence increases annually. Last year there were only six classes identical. While, however, the Crystal Palace schedules show no alteration, except in the number of Roses in pots during the six years, those of the Royal Horticultural Society became more elaborate and suitable to the progress of Rose culture every succeeding year, the schedule of last year being the best that has yet been framed by them. This speaks well for the Society, and shows that the Council, or those who compile the schedule, are fully cognisant of the increasing interest taken in Rose culture, and desire to give the full weight of the powerful influence of the Society in promoting it.

There is not, that I know of, nor should there be, any antagonism between the two shows. The same, or nearly the same exhibitors contribute to form both. There is, however, a difference in the number of visitors attending the two shows. Last year this difference was very marked; while the Show at Kensington was superior in many respects to that at Sydenham, the number of visitors who attended the latter was greatly in excess of the number at the Kensington Show. This circumstance should have some weight with the authorities at the Crystal Palace to induce them to revise their schedule for another season, if they wish to obtain a display satisfactory to the visitors, and at the same time deserving the confidence of exhibitors.

It will not be deemed out of place here to remark, that all who have seen and know the beautiful structure at Sydenham, must have learned with the deepest regret the sad calamity that has recently happened, by which a portion of the Palace has been, let us hope only temporarily, destroyed by fire. Whatever may be the arrangements for the forthcoming season affecting horticultural shows, the Company may rely on the sympathy and support of the horticultural body who have hitherto contributed to these Exhibitions, and as regards the Rose Show, the most popular of them, a considerable accession of strength would, undoubtedly, be obtained by simply adapting the arrangements to the requirements of the times.

The classes in the schedule may be reviewed under three sections—those assigned to growers for sale, to amateurs, and the open or miscellaneous classes.

As I hold it to be a primary consideration in the framing of the schedule, that the classes be arranged to meet the capacities of different exhibitors, I am impressed with the belief that the compilers of the schedules for the Rose shows acted upon this principle, by allotting the different numbers from ninety-six to twelve trusses to different classes, for the purpose of inviting the competition of growers according to their stock; of those growers for sale with whom Roses form one of the most important subjects of their business, as well as of those with whom they are only a portion of the general stock; for those amateurs who have time and space for the cultivation of several thousand plants, and can cut their forty-eight on any given day in the season, as well as for those who with less of either, yet feel the same pride in filling a box of twelve, on what to them is the eventful day of exhibition. If this was, as it ought to have been, the original object, it has been very decisively nullified. In the list of awards at the Crystal Palace Show, in 1861, will be found the names of sixteen different nurserymen among the successful competitors in the various classes, and eighteen amateurs. On turning to the last year's list we shall find but seven different nurserymen taking twenty-eight prizes; of these, five names well known in connection with Roses secured twenty-five prizes among them, the remaining three were taken by the other two: one a third, value 20*s*., and a fourth, value 15*s*., and the other a fifth, value 10*s*. In the same award we also find twenty-five prizes taken by eleven or twelve amateurs. The time chosen for the Show last year was rather too early, and probably influenced this result, but only slightly.

At the Show at Kensington, in the following week, when the time was more appropriate, the whole of the nurserymen's prizes, including most of those marked "Open," were taken by names now so familiarly associated with the Rose, but by no more of them than can be counted on the fingers and thumb of one hand. The reason of this has long been obvious. Those gentlemen who are usually known as the great Rose growers, by their sedulous attention to culture, their long experience, their enormous stock, and, generally, the favourable soil of their nurseries, have distanced all other competitors, and no restriction being placed on the number of classes in which one exhibitor may enter, the classes assigned to growers for sale have simply become a monopoly in their hands to be contended for among themselves. We all remember the marvellous flowers exhibited by these gentlemen, and the praises lavished upon them by the admiring spectators, and deservedly too.

Considering how much the great growers, or more correctly speaking such of them as exhibit, have done for those shows (for of late more than one respectable name has been missed), would it be just to introduce any restriction in the nurserymen's classes now, after being left so many years without any? Is it equally fair to shut out many respectable men who would be willing to enter into competition with their compeers? Herein is a knotty question. A similar inquiry may be made respecting the amateur classes. Of the four classes assigned to amateurs at Kensington, exclusive of one or two others in the miscellaneous section, entries were restricted to two. At the Crystal Palace there has been no such restriction, yet at Kensington it appears to have acted beneficially. Would a similar result attend a like restriction in the nurserymen's classes? I think it would, with some reservation, which is this—so much is due to those gentlemen into whose hands the whole of the nurserymen's prizes have by the force of circumstances fallen, that to introduce any restriction without some corresponding compensation, would not be dealing fairly with them, in consideration of what they have done in past years to render the shows successful and attractive.

Supposing the sum total to be applied for prizes to remain the same in the case of the Crystal Palace schedule, there is room afforded for such compensation. In open competition any place obtained is honourable to the competitor, especially if within the first four places; but no one, that I am aware of, sets a particular value on a fifth prize. At Kensington none of the prizes extend beyond a fourth. At the Crystal Palace seven classes are stretched out to a fifth. Let the fifth prizes be abolished. Again, Class 5 has hitherto been twelve varieties, one truss of each, for nurserymen only; and Class 14, for Roses in pots, confined to new Roses first sent out in the previous year. Neither of these classes is necessary, the first requiring too small a number from growers for sale, and the second being sufficiently provided for in the classes for new Roses and Roses in pots. If the sum applied to these classes, and to fifth prizes, were added to the prizes in Class 1 and 2, the highest for nurserymen only, the amount would not only cover what is assigned to Classes 3 and 4, but leave a margin to be applied to some other useful classes, or for the introduction of some new feature in the Show, as a class for Tea Roses, some single variety, Yellow Roses, &c.

By this arrangement, if the entries by one exhibitor be restricted to two classes, as they are for amateurs at Kensington, the great growers will lose nothing, so far as the value of the prizes is concerned. Or, if this restriction be objectionable, let Class 3 be for twenty-four varieties, three trusses of each, Remontant Hybrids only, as at Kensington, allowing competitors to enter for any three classes, thus leaving Class 4 to be competed for by small growers, if they decline to enter for the higher classes. It would do no harm to try the experiment of this slight restriction both at Kensington and the Crystal Palace.

A great improvement in the Show at Kensington was effected by the introduction of classes for Yellow, Tea, Noisette, and Moss Roses. Of six classes assigned to these, one at least appears superfluous. Last year, Class 14 was for twelve Tea and Noisette Roses, distinct kinds, for amateurs only; Class 15 was similar, but for nurserymen only; and Class 16 was similar, but open. The last might be dispensed with, the competition in all of them being as yet but very limited. Classes like these should be introduced into the schedule of the Crystal Palace Show.

As regards the number of flowers required in the several classes, the most objectionable is the ninety-six in the first class for nurserymen at the Crystal Palace. At Kensington, the greatest number required is seventy-two. I say objectionable, for although there are several hundreds of varieties in cultivation, yet if improvement is aimed at, and the selection kept within reasonable bounds by the rejection of inferior kinds, a lower number than ninety-six will effect the object, by bringing the very choicest together in the best condition. Ninety-six varieties are not wanted, nor do ninety-six varieties of equal merit exist, scarcely half ninety-six. It must not be inferred that all Roses specially pointed out as the best, should be after one uniform model; on the contrary, we desire variety in form as well as in colour; hence we have the cupped, globular, imbricated, &c., and this difference of form adds in no small degree to the pleasure and interest of cultivation. A globular Charles Lefebvre, or Chabrillant, and a Lord Clyde with the form of William Griffiths, would be very beautiful; but nobody would dream of excluding them because they are not so. Seventy-two varieties would include every perfect form and colour yet known.—Apollinus H. Kent.

(To be continued.)

PINCHING FRUIT TREE SHOOTS.

On looking over your Journal of December 18th, I see that "Theta," would like a little information respecting pinching and stopping fruit tree shoots. Perhaps my remarks may be of service to him,

My plan is to disbud a Peach tree as soon as the bud is well in leaf, leaving the buds after disbudding 5 or 6 inches apart, and each bud alternately above and beneath the twig or spur.

I never stop the shoots until they have five or six joints.

There is no fixed date to pinch or disbud a Peach tree. I have disbudded as early as February and as late as June. My trees here are so covered with the aphis as soon as they come into bloom that they lose all their first leaves in April, consequently they are a long time in making a second growth. Hence it is very late before they require disbudding, and I never stop the shoots until August, when I nail in and stop rather closely to expose the fruit to the sun. We have but little sun here after July, and I am glad to say I, like "A Constant Reader," was amply rewarded for my trouble with a fine crop of fruit, well coloured, but not quite up to the mark as to flavour.

I ought to have said my disbudding in February was in a Peach-house, and the fruit was ripe in May; but here my trees are all out of doors, facing south-east, and were not protected from frost in the least. Some trees that I have on a south-east-by-east wall were well protected with matting, and there was but a dozen Peaches on a wall 60 feet long by 14 high. So much for covering fruit trees.—T. Elcome, *Rhug Gardens, Corwen, North Wales.*

EARLY ROMAN HYACINTH.

This pure white and delightfully fragrant Hyacinth flowers in November at a time when scented flowers are very scarce. Each bulb produces three or four spikes of flowers, resembling a very large Lily of the Valley, and when half a dozen bulbs are planted in a six-inch pot their bloom forms a perfect bouquet. I, for one, can vouch for the justice of the recommendation made by Mr. Ker, of Basnett Street, Liverpool, having grown a quantity this season. The plant has been in bloom with us about two months, and has been very much admired.

From the low price of the bulbs I have not the least doubt that when better known the Early Roman Hyacinth will be much more extensively grown. Planted in large shallow pans, similar to those used for propagating bedding plants or growing Achimenes, the bulbs placed about 4 inches apart, when in bloom they are very beautiful. Visitors for the last three years in November at the shows at St. George's Hall, Liverpool, will remember how beautiful they were.—William Hill, *Keele Hall, Staffordshire.*

CASIMIROA EDULIS.

There is perhaps nothing so easy as to enunciate fine moral sentiments, except it be not acting up to them. So at least I thought when reading the article on Psidiums by "Radii, *Peterborough*," at page 44, where he says, "This assertion shows how careful people should be before they make a positive statement;" and yet at the end of his short paper, in referring to Casimiroa edulis he writes thus, "I see the above-named plant advertised by a London nurseryman, giving a flaming account of its capabilities of adapting itself to various situations. It may exist in the west of England in a sheltered situation, but it requires a stove to grow it in perfection, when it becomes a large bush, having numerous Apple-shaped fruit." Now, having a pretty general acquaintance with London nurserymen and their catalogues, I could recollect (and subsequent search has confirmed this), that Casimiroa edulis is only advertised by Mr. Wm. Bull, of Chelsea; and yet after all "Radii's" moral indignation at positive statements, it is certainly amusing to find that this London nurseryman gives no flaming account, but merely quotes the words of that eminent botanist Dr. Seemann.

Mr. Bull says, "This new fruit has been sent me by that zealous botanist and enterprising traveller, Dr. Seemann. In writing from Nicaragua he says:—'With other seeds I have the pleasure to send Casimiroa edulis, a large fruit like an Apple, which was brought to this country from Mexico by the soldiers and colonists of Montezuma, and of which you will see a figure in "Botany of the 'Herald.'" I fancy it may prove hardy in the southern parts of England, and might be introduced into Australia with the greatest advantage, as it is evergreen, and capable of standing any amount of drought and some degree of cold.'

"This fruit is described in 'Botany of the Voyage of H.M.S. "Herald," Flora of North-Western Mexico,' and thus spoken of:—'This tree has a remarkable tendency to accommodate itself to different climates. It grows from the lowest coast region to an elevation of 7,000 feet, producing everywhere an abundant harvest.'"

Now surely there is no flaming account by a London nurseryman here, but simply statements from two sources of undoubted integrity and scientific authority; and so far from any assertion as to its hardiness, Dr. Seemann only says, "I fancy

it *may* prove hardy in the southern [not western] parts of England," and adds that it is capable of bearing *some* degree of cold.

"Oh, wad some pow'r the giftie gie us,
To see oursels as others see us."

"Radnii," however, seems to have but little opinion of nurserymen in general, as he says again in reference to Psidiums, "No dependance is to be placed on purchasing them true." Surely this is rather hard; and I hope "Radnii" will not only adhere to his own excellent sentiments, but also be less disposed to join in the foolish cry that is too often raised against nurserymen for their glowing descriptions.—D., *Deal.*

P.S.—May I add here in reference to Mr. Scott's remarks with respect to Potatoes, that I thought I had mentioned the character of my soil, which, as he conjectures, is rich?

HARDY FLOWERS IN JANUARY.

Seeing your request for a list of flowers in each month, I ventured to begin on the 1st of this month, and then had gathered for me good specimens of the following:—Violets, abundant; Hepatica; Anemone (lilac); Aconite; coloured Primroses.

After being five weeks a prisoner in the house, I this day, January 24th, have been all round my garden and am delighted to find but little damage seems done, as all shrubs look well. Honeysuckles, Tartarian Honeysuckles, leaves opening; Ribes buds swollen; Mezereon buds quite pink; and if this genial weather continue the garden will soon be gay.—Mrs. F. Munn, *Rougham, Bury St. Edmunds, Suffolk.*

PEARS AND PERPLEXITY.

A friendly collision between Messrs. "T. R.," G. Abbey, and others, is like that between flint and steel, and the lookers-on are benefited by the sparks, which afford amateur fruit-growers like myself some little light to guide us through the too-often conflicting theories, assertions, and practices of various authors. We rise from the study of Du Breuil's excellent work convinced that a single vertical cordon is so simple, so effective, and beautiful, that we wonder we never thought of it before. We at once try the method, and painfully realise the difference between an English and French climate. Mr. Fish, enthusiastic on the subject, seems to anticipate the time when every cottage garden will boast its comely generous cordons; but Mr. Bréhaut, the most experienced, perhaps, and successful in this his peculiar system, gives a stern caution—It must be done in one way only; the shoots must be pinched at the right moment; walls so high must have so many leaders, the grosser-growing varieties more, the weaker fewer;—leading to the inevitable conclusion that, however beautiful and productive the system may be, there is no inconsiderable amount of care and observation to be exercised; and we rise from the contemplation of many publications with the feeling that in the multitude of books there is perplexity.

This perplexity has been increased just recently. In the spring of last year a long and able controversy seemed to decide that Pears on the Quince should not be allowed to emit roots from above the graft. Again we are in doubt. We are told to plant up to the graft, but not to cover it, and our trees came from a first-class nurseryman grafted 6 and 8 inches above the roots. What is to be done? for we must not on any account bury the roots so deep. Thus ordered to perform an impossible operation, we conclude such trees are improperly worked. In the case of some Jargonelle Pears I kept the roots near the surface; in two years the scion was twice the size of the stock, and the tree unhealthy; now the roots are buried, so in any case I am wrong, but see no help for it. Will "T. R.," or Mr. G. Abbey, or some other authority, increase our obligations by stating the limit of distance between graft and roots, whether such trees as I have described should be rejected, or whether the roots should be buried, or the stock hidebound as the alternative?

Another *quæstio vexata*—whether Pears on their own roots, and Apples on the Crab, are not better than on the Quince and Paradise, appears determinable by the size they are intended to attain and the soil they are to grow in, the latter being a fruitful source of differing opinions. For instance, in the garden of a friend there is a long row of bush Pear trees upwards of twenty years old; all those on the Quince are healthy and productive, all on the Pear cankered and decaying. His gardener advised me to plant nothing but trees on the Quince; within a month I was advised by another, who cultivated an opposite description of soil, to plant nothing but trees on the Pear.

Whilst thanking Messrs. "T. R." and G. Abbey for their recent articles, let me express a hope, that the discussion may be continued, so that we may have the promised experience of Mr. Abbey on the different results of budding and grafting, and other hints which are of much interest and benefit to such ardent novices as—C. C. E.

GREEN TURF.

I think "Forwards" has drawn largely on his imagination as to the cause of the injury his trees received in the turf soil. The larvæ of the cockchafer will eat the roots of trees, as the Surrey nurserymen know to their cost; but who ever heard of them in numbers sufficient to account for the havoc described, except in very light sandy or peaty soils? I, certainly, never met with them in large numbers in such soil as a Vine-grower would be likely to select. Then, again, would such larvæ if present be likely to be overlooked, great conspicuous fellows as thick as a man's finger? and if overlooked, how many would escape the paring and chepping of the turf, &c.? Those who know anything of these maraudera know how easily they are injured.

With regard to the larvæ of Tipulæ, I have seen the roots of Phloxes and herbaceous Pæonies eaten by them, and seen rooks busy pulling grass up to find the larvæ of Tipulæ feeding on the roots, but I have yet to learn that these larvæ ever eat the roots of trees; they may do so, but I have never found any injury of the kind I could trace to them; and I can assure "Forwards" that, though our "fine green turf" is not full of the grubs of the cockchafer, we have plenty of "daddy long-legs."

As to wireworms, like most farmers, I have suffered enough by their attacks to make me study their habits. Corn of all kinds and the Grasses in general they will eat, boring into their stems just below the ground, and eating their way upwards. Mangold Wurtzel in a young state, Turnips, Potatoes, and Carrots are eaten by them. In the garden, Pinks, Carnations, Daisies, Polyanthuses, and Primroses suffer from their attacks; but I never saw one at a tree root in the act of feeding, nor do I believe any one can prove they ever eat the roots of trees.

As is very well known, I have a good many acres of orchards, many of them fifty years old, and all but one are in grass. So plentiful are wireworms in the turf of these orchards that a sweet Pear, which has lain on the ground some days, may be often found with ten or a dozen wireworms in it: how is it they have not killed all the trees by eating the roots? Yet these trees look pretty well, at any rate a ladder of fifty staves will not reach the tops of some of them.

But, supposing wireworms injurious to Vines and trees in general, will leaving the turf some time cut on the ground, and then stacking it a year, get rid of them? I leave any gardener to answer the question.

When I write in "our Journal" it is with a sincere wish to add my mite to the general stock of information, thinking the readers ought to consider themselves as a mutual improvement society. I have seldom answered objections, leaving to others to discuss what I have advanced, being more anxious to lead others to think than anxious to force my opinions on them as incontrovertible truth. The Editors will bear me out in saying, that when I have taken exception to what others have written I have always signed my name in full.—J. R. Pearson, *Chilwell.*

THE PRINCE OF WALES POTATO.

We most of us admit, that we should speak of a man as we find him, and I do not see why we should not do the same of the Potato.

Living in a neighbourhood where there are at least five hundred acres of Potatoes grown annually, being a grower myself, and taking great interest in having the best sorts, I bought some of the Prince of Wales in 1865, for I saw this Potato advertised, certainly with a wonderful character.

I have not found it so good in flavour as I should like, nor is it a second early; but it is well up in all other points.

I planted it, as I have said, in 1865, had a heavy crop, but

like all other Potatoes that year, second growth occurred to it, and one-third was diseased.

I gave it another trial in 1866. I planted it on a piece of dry soil in drills 2 feet 6 inches apart, the sets 20 inches from one to the other. Lawes's manure was used on the sets. In the last week in July I took one plant up, and the Potatoes it bore weighed 6¼ lbs.; I was, consequently, tempted to take some up to send to the London market. On the 2nd of August I had a ton sent thither, and there were only 8 stones of small ones, which made in all 21 cwt., and the land which produced them measured only 9¾ poles. That ton of Potatoes sold in London for £6 17*s.* 6*d.* This is the Potato for me.—E. J. Atherton, *Nurseryman, Chatteris.*

PROPAGATING AND PRUNING BLACK CURRANTS.

For the benefit of amateurs I see Mr. Read has written some notes on the best way to grow Currants. I think he has gone on very well until he came to the Black Currant, as to which I am sure he has made some mistakes. Thus, I infer that he intends the cuttings to be made in the same way as those of the Red and White. I am sure that there are many growers who will coincide with me in saying that that is one of the greatest of mistakes, for if so made half of the head will often die from some unknown cause.

My plan is to put the cuttings in with all the buds on them, say four or five, leaving one above ground. Next autumn cut all the shoots down to two eyes; by doing this you will have eight nice strong shoots which will bear a few bunches of fruit. The plants are now fit to plant out permanently; set them in rows 5 feet by 4 feet. A row of Cabbages may be planted between them for two or three years; plant the Cabbages early and they will come off before they can interfere with the Currant trees. In the following autumn cut off the foremost shoot to the next lower one, and so continue every year. Never let more than two or three years' growth be on one shoot before you cut it to the ground (if there is no shoot to take its place, cut it to the next shoot lower down), and if a shoot die you have two to take its place, which will spring up from the ground.

After a few years, if your bush become too large and the shoots extend too far in the rows, take the spade and chop them off closely with roots to them, and if you want to make another row they will quickly form good plants for the purpose; you will save two years by using them. Be sure never to cut off the top of any shoot if it is too long, cut it out altogether; never be afraid to cut out plenty of shoots, for the Black Currant likes plenty of sun and air, and does not succeed so well as the Red Currant in the shade. In fact, the Black Currant is as different from the Red and White as the May Duke Cherry is from the Morello, the older and more shrubby the tree the more and better the fruit; but on the Black Currant, like the Morello, all the young wood should be preserved, and no topping is wanted.

I could show Mr. Read a large number of Black Currant trees, among them some which have been planted about twelve years, and not one more than 3 feet high and 10 feet across. I do not remember a single plant in the plantation having died out. I find by well thinning the trees out, giving plenty of manure every year, and growing none but the Black Naples, that the fruit will make a very pretty dish for the table, and especially where no Grapes are grown. The fruit is both large and sweet, and I have seen bunches 4 inches long with as many s twenty berries on them.

I wonder Mr. Read did not offer some remarks about the Gooseberry, with respect to which information is not less needed than in the case of the Currant. I treat them in the first place as he does the Red Currant; but, as in the case of the Black Currant, after the third year I never shorten the shoots I intend to bear, unless it is one that has grown too far out of the way.

I think it is a wrong system to cut every shoot to about 3 or 4 inches; of course, from every shoot so cut you must expect three to spring, and very little fruit, and in the following spring you have a hedge. On my system, leave the leading shoots about 6 inches apart; cut everything else clean out, and do not shorten the shoots. In the following season you will have one or two shoots from that left, and plenty of fine fruit; cut the old shoot out leaving one of the young ones for the next season, and so on every year.

As to Red Currants we can always find plenty of vacant spots for them on the walls. Against walls too low for anything else, and with any aspect, wherever there is a space of 2 feet to spare, there the Red and White Currant are planted. Train the branches 6 inches apart, and prune them just as Pears and Plums.—J. T.

CUCUMBER FAILURES.

For years I have been a grower of Cucumbers, and have many times witnessed that we cannot, even under the best of treatment, insure the best results. I have some Cucumber plants showing fruit; they have been looking well and are now, only, it may be, one of the best and healthiest-looking plants will to-day show symptoms of flagging in part of a leaf, or a whole leaf, as if wanting water; to-morrow perhaps other leaves and footstalks hang drooping; next day one or two more, and so the evil goes on for weeks and the plants cannot be said to be either alive or dead. Of the leaf that flagged first the footstalk will again become stiff, but the blade will be wholly gone (crisped up). From the first symptoms the plants make little or no growth; sometimes I have known them break from the stem, but the foliage so produced only shares the same fate as the older leaves. Leaf after leaf suffers until the whole of the foliage is gone, and the plant is good for nothing.

I have repeatedly taken up the plants and examined them, sometimes there is a partial decay of roots with the stem looking well and healthy; at other times the stem and all the roots appear to be attacked, and then, of course, the plants die quickly.

In my Cucumber-houses the disease generally takes the winter plants just as they are beginning to bear, about this time —say January and February. In March and April, when the days are longer, the plants have not suffered in the houses; but I have had the ridge Cucumbers in the summer months out of doors affected in a very similar manner for several seasons.

I have tried all kinds of changes of soils and seed, but to no purpose. I have never seen any one's plants do as mine have done. I have been where Cucumbers were grown almost throughout the year, I have mentioned the evil to others, and showed my plants, but have never yet met with any one who has experienced the like.

My houses are heated with hot-water pipes for top heat, and there are cement tanks under the beds, with hot-water pipes running through, for bottom heat. I can have plenty of heat, the range being from 60° to 80°. Our houses have not been below 60° during this cold weather.—An Old Subscriber.

[We have experienced the same evil, especially in winter, and when the plants were grown in low pits, and have generally traced it to too much heat at the roots, and too much moisture at a season when the processes of evaporation are very irregular; a good layer of rubble between the tank and the soil might help. We seldom meet with this complaint in houses where the light strikes freely to the bottom of the Cucumber plants, and where there is room to have the soil in a rather steep ridge instead of as a flat bed. Where, as in your case, there is plenty of heat, a steep roof, even a rather steep span-roof, is best for winter Cucumbers. Many plants fail about this time that have borne up to Christmas. What say other correspondents ?]

ON PRUNING CEDRUS DEODARA.

[The following is extracted from "The Gardener," a new series of the "Scottish Gardener," edited by Mr. William Thomson, of Dalkeith Palace Gardens, and which promises to be a most excellent monthly publication.]

The Deodar or Temple Tree has now become a favourite all over Great Britain. The parks and pleasure-grounds of the wealthy, the metropolitan parks and cemeteries and town squares, as well as villa and cottage gardens, all boast of their Deodar Cedars. Many of these trees are in a faultless state; still large numbers of them are to be seen in a sad and apparently neglected condition; but all are capable of being brought into shape by a free use of the knife, and for this end I propose giving a few practical hints.

The Deodar was first introduced into Great Britain by the Honourable William Leslie Melville during the year 1831, from seed collected on the Indo-Tataric mountains, at an elevation of 10,000 or 12,000 feet above the level of the sea, where it attains a height of 180 feet, and sometimes even 200 feet,

having stems from 24 to 30 feet in circumference. Few plants were introduced at first, and these primary or original trees are now noble specimens of their kind.

As cuttings of the Deodar are very freely produced under certain circumstances, a large proportion of secondary trees were soon obtained. Afterwards the Honourable East India Company gave liberal encouragement to their introduction, and through their instrumentality a large quantity of seed was annually imported. About fifteen years ago it was the wish of our Government to have them introduced on a much larger scale for forest planting, when upwards of a ton weight of seed was sent home, raised in various nursery establishments in the three kingdoms, and afterwards planted out for this desirable end.* A great drawback, however, to the forest extension of the Deodar was the loss sustained during the unprecedented winter of 1860-61, which injured a large proportion of trees in various soils, but chiefly in damp situations. The state in which certain trees were at the time, caused by late growths, brought on by a warm, moist autumn, and succeeded by a frost, the severity of which was almost unknown in Britain—viz., 3° below zero, was considered by many as the cause of their destruction; but from a careful investigation of the affected trees, I came to the conclusion that many of the Deodars during the above winter were injured by the heavy fall of snow we then experienced, forcibly bending their long projecting branches towards the ground, thus rupturing the vessels; and while in this condition the injured vessels along the upper surface of the branches became exposed to the severe temperature, while other trees growing side by side sustained no damage whatever. This observation was found peculiarly applicable when examining pruned and unpruned trees. In almost all cases the former were saved, while the latter, particularly those with long horizontal branches, were more or less destroyed, although several were more than 15 feet in height.

The pruning of the Deodar, although practised in some large establishments, is, perhaps, not so generally adopted as it ought to be. For the information of inexperienced cultivators I beg to offer the following remarks. For many years past, and even at the present time, it has been considered vandalism to touch a Deodar, or even any species of Conifer, with a knife. This common but false notion has been the cause of so many of them getting out of shape by taking breadth instead of height, and many assuming numerous leaders. In its native state the Deodar is found growing in large forest groups, where the lower branches are rarely seen, being all decayed from close confinement, which causes them to grow upright. When planted singly, as is generally done in this country, they naturally branch to the surface of the ground.

From long experience and practice in the pruning of the Deodar, and judging from the beauty which many of the trees so treated have assumed, I am decidedly of opinion that pruning should be done at a very early stage of the plant's growth, and continued in a limited degree for a few years afterwards, for if once put into proper shape it is likely to retain it. Several millions of Deodars have been planted over the country, and little has been done to improve them. It is now high time that many of them should be operated on, seeing that it can be done with safety. I never saw a plant injured from judicious pruning, whether 3 or 30 feet in height, provided it was done at a proper season. The best time for pruning the Deodar is after the summer growths are matured, which is generally the case after the second week of August. Any time after this period pruning may be done with perfect safety, and continued throughout the autumn and early winter months, September and October being, however, preferable for the purpose. The Deodar always looks best when it has a pyramidal shape; and the most unsightly, if carefully operated on, can sooner or later be made to assume this form. Supposing a plant, 6 or 10 feet high, having several leading tops, fix on one for a leader as near the centre of the plant as possible; all others must be cut out, and the plant afterwards freely trimmed-in all round, beginning at the bottom and working upwards. The lower branches, no matter what their thickness, should be all equally shortened by introducing a sharp knife below, and cutting them off upwards and outwards, as well as all the branches below the level of the eye. All the upper branches should be cut from above, outwards and downwards. By a rigid adherence to this treatment no cut portions are exposed to view. The secondary or side branches should also be cut in the same way, and so on till the whole plant is made to assume a pyramidal shape, which is, indeed, its natural form of growth. Care must be taken to have any stray shoots removed from the side of the leader, which, in its natural and perfect state, is always bent downwards. In no instance attempt to tie the leading shoot upright, as it will be found that it will erect itself during the following season. Some ill-shaped plants may be disfigured for a time from excessive pruning, but this, from the distorted state of some of them, is absolutely necessary. The next year's growth, however, will soon bring such trees into proper training.

One large plant known to me was 30 feet in diameter of branches on the surface of the ground, and 20 feet in height, and had all its lower branches, although 1½ inch in diameter, cut so that the tree was reduced to a diameter of 20 feet at the bottom. All the other branches were shortened-in as above described till the tree was cut into a pyramidal shape. Previous to pruning the terminal shoot of this tree was barely making way. A year or two after the pruning was accomplished it began to grow freely, and the numerous pendant growths annually made have given to this tree a very graceful habit, and justly entitle it to the name of the Fountain Tree, now generally given to the Deodar.

After being once properly cut into shape it is seldom necessary to give the Deodar any after-pruning, unless to remove duplicate leaders that may be forming. If in after years it should be found that one side of a tree is bulging out more than the other, a free use of the knife will soon put all right. After pruning some ill-formed trees it is not an uncommon practice, in order to give gracefulness to the tree, to have the centre or leading stem tied upright. This ought to be avoided, as the pressure caused by the tie will very soon indent the bark and gradually work into it, causing the upper portion above the cord to become yellow, and ultimately decay.

It is a remarkable fact that those trees which stood best the severe winter of 1860–61 are those cuttings and seedlings which had been freely pruned at an early period. The growths on these were numerous and short, and resisted bending with the heavy snow, which was found to be so fatal to those trees where pruning had not been resorted to.

For many years, as before stated, cuttings of Deodars were freely made and distributed, and at the present time it is easy to tell trees produced from cuttings from those reared from seed. The branches of all the cutting-made trees generally come out horizontally all round the stem, composed of irregular whorls having intervening spaces, with points and side branches all pendulous. If such specimens are left to themselves they never will assume the compact form of seedling plants. Although the cutting-made trees with horizontal branches suffered most during the heavy snow and frost of 1860–61, such trees, when freely lopped in, can soon be made to assume a very different habit, so as to resist a heavy fall of snow, becoming thus not liable to have their vessels ruptured, and thus become a prey to frost.

Several of those most injured in the Botanic Gardens were reared from cuttings taken from one of the original trees introduced by the Hon. William Leslie Melville, and now growing in the garden. This original tree had its lower branches much bent down and injured with the weight of snow. A free pruning during the following autumn put this fine tree all right again. About the year 1856 the large tree was much cut in to keep the branches from interfering with two walks, which operation greatly assisted to protect it. If the trees totally or partially killed (at least all above the snow-line 2½ feet), had not been produced from the large tree, it might have been inferred that they were cuttings taken from a tender variety. Unpruned plants from cuttings taken from the original tree, standing both on high and low situations, suffered equally.

For the purpose of pruning large Deodars, I find the best method is to have a large tress, 6 feet high and 5 feet long, having no spars on one side, so as to stand close against the tree, while the other side has cross-rails arranged in the form of a ladder, having the upper step 6 inches broad, so as to enable the operators to stand on it. By means of this tress

* The seeds alluded to were divided between the nursery establishments of Messrs. Glendinning, of the Chiswick Nursery, London; Messrs. Skirving, of the Walton Nursery, Liverpool; and Messrs. P. Lawson and Son, Nurserymen, Edinburgh, to raise them for the Government plantations. The quantity reared in the Edinburgh nursery was very large in proportion to those raised in the other establishments, no doubt owing to their being sown broadcast in open-air beds, for the first time in Europe, instead of employing pits and frames, as was adopted in London and Liverpool. Those individuals who witnessed the extensive beds of Deodar seedlings in the Golden Acre Nursery, sown and reared under the able management of Mr. P. S. Robertson (now of the Trinity Nursery), will not soon forget the sight. The beds were prepared and sown as if for Scotch Fir or Larch.

the pruning 12 feet up can easily be done; but for higher pruning it is necessary to place a stout ladder against the tress, held firm at the bottom, up which the operator can ascend and prune a tree from 20 to 25 feet in height. If the pruning of a still higher tree is required, it is necessary to have two strong ladders of unequal lengths, so that one may lean upon the other, and thus be held firm against the side of the tree and moved round as the pruning goes on.

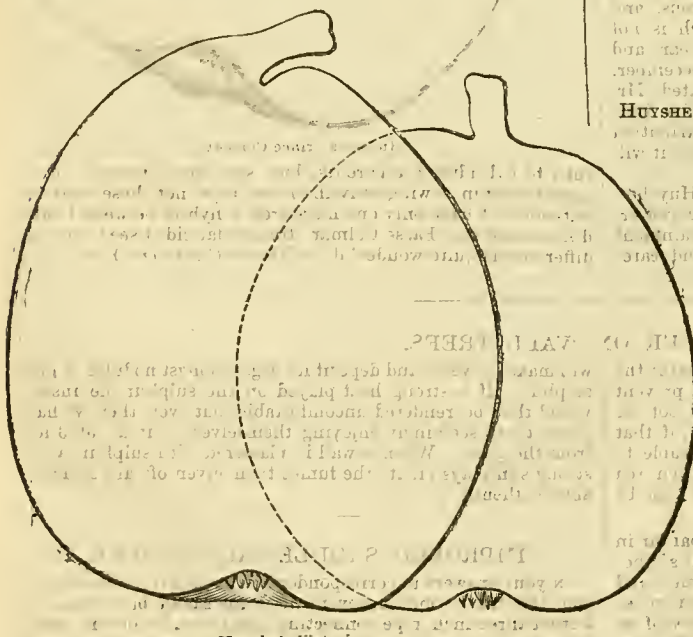
The Deodar is now becoming a favourite tree to plant on grass in front of villa residences, and if treated as described it will soon become a picturesque object. Such trees should always be protected with a wire fence, as many planted in such situations get injured by dogs, and are never replaced, from an idea that they will not succeed.—J. M'Nab, *Royal Botanic Garden, Edinburgh.*

THE ROYAL PEARS.

The Royal Pears have a just claim to such a title. Raised as they were by the descendant of ancient royalty, introduced as they have been at the table of royalty, and bearing as they do right royal names, what better claim could they have to such a designation? In their origin, too, they are no haphazard mongrels, but individuals of high descent and noble pedigree.

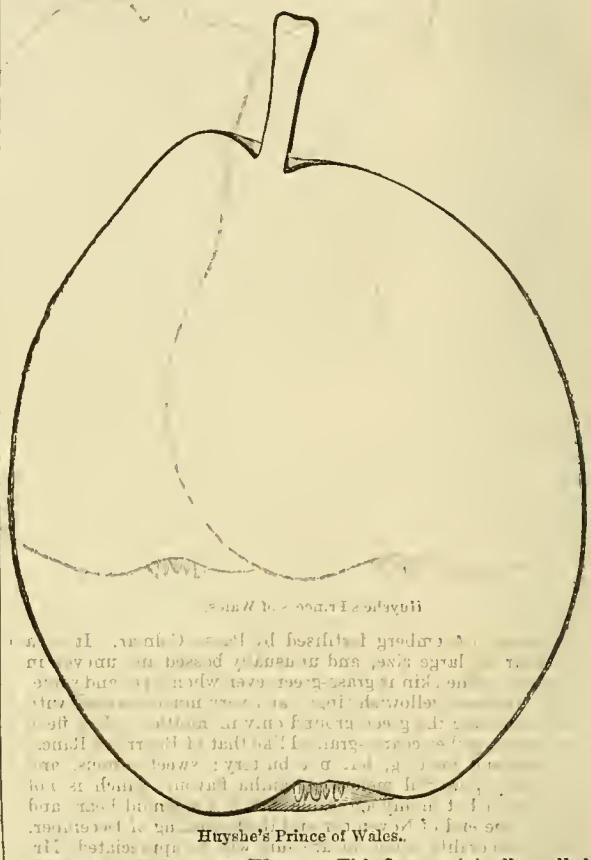
It is to the Rev. John Huyshe, of Clythysdon, near Exeter, that we are indebted for these valuable additions to our pomological collections. "It is now about thirty years, or rather more," writes Mr. Huyshe in the autumn of 1864, "since I began the practice of hybridising Pears, and the effects have been peculiarly striking. From Marie Louise hybridised with Gansel's Bergamot, I obtained three pips from one fruit, and the produce of these were respectively the Pears now known as Victoria, Prince of Wales, and Princess of Wales." In a previous letter of the same year he says: "I send you another Pear, a seedling, being a hybrid between Beurré d'Aremberg and Passe Colmar. It has borne fruit this year for the first time, and what it may be of course I know not, but it seems to promise to be good." It did prove good, and I was subsequently informed that "Mrs. Huyshe wishes it to be named Huyshe's Prince Consort, in memorial of one whose character she greatly admired."

Such, then, is the origin of these four fruits which we have now the pleasure of introducing to our readers, and of which the following figures and descriptions will furnish a good idea of their characters and qualities.



Huyshe's Victoria.

Huyshe's Victoria.—This and the following made their appearance in public much about the same time, and at once took their position as fruit of high merit. In form Victoria is very characteristic. The two shapes which it usually assumes are represented in the accompanying figure, where it will be observed that one is very similar to Beurré d'Aremberg, with the very oblique stalk; while the other has the stalk inserted in a line with the axis, and is particularly short and stout. The skin is of a yellowish ground, and freckled and veined all over with thin, smooth, cinnamon-coloured russet. The flesh is yellowish, sometimes a little gritty at the core in dry seasons, and melting, very juicy, rich, sugary, and vinous. It is in use during December and January.

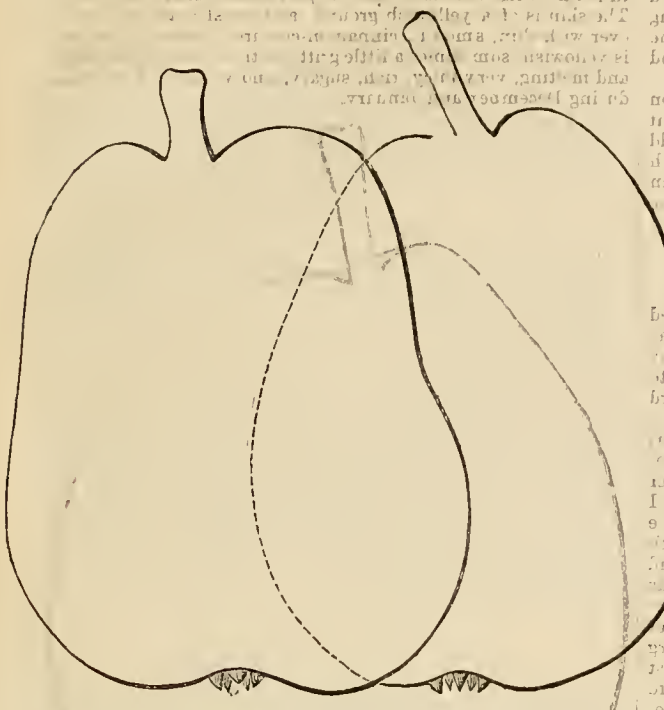


Huyshe's Prince of Wales.

Huyshe's Prince of Wales.—This was originally called Huyshe's Bergamot, not because it is at all like a Bergamot, but because the flavour bears some resemblance to that of its male parent—Gansel's Bergamot. On it being represented to Mr. Huyshe that such a name was at variance with the appearance of the fruit, and might tend to mislead, he at once consented to the change, and it has now for some years been known as Huyshe's Prince of Wales. The fruit is large, sometimes immensely so; and we have seen it grown against a wall as much as 4 inches long and 3½ in diameter. Its ordinary size when well grown is that represented in the figure. The skin is of a lemon yellow ground veined with cinnamon-coloured russet. Eye small for the size of the fruit, and open. Flesh yellowish, tender, and fine-grained, melting and very juicy, richly flavoured, and with a high aroma.

Huyshe's Princess of Wales.—This is the third of the produce of the "three pips from one fruit," and like Victoria varies much in form. Sometimes it is quite cylindrical and pinched in at the middle with a sort of waist, even more so than is represented in one of the figures. The skin is like that of a handsome Marie Louise, with a smooth lemon yellow ground colour, sprinkled with patches, veins, and dots of pale cinnamon-coloured russet. Flesh of a deep yellow colour; and in specimens received from Mr. Huyshe in 1865, was very melting and abundantly juicy, fine-grained, richly flavoured, and with a very high aroma. That same season it was presented to the Princess

of Wales at Sandringham, who was graciously pleased to express herself very highly of its great merits. It is ripe in the end of November.



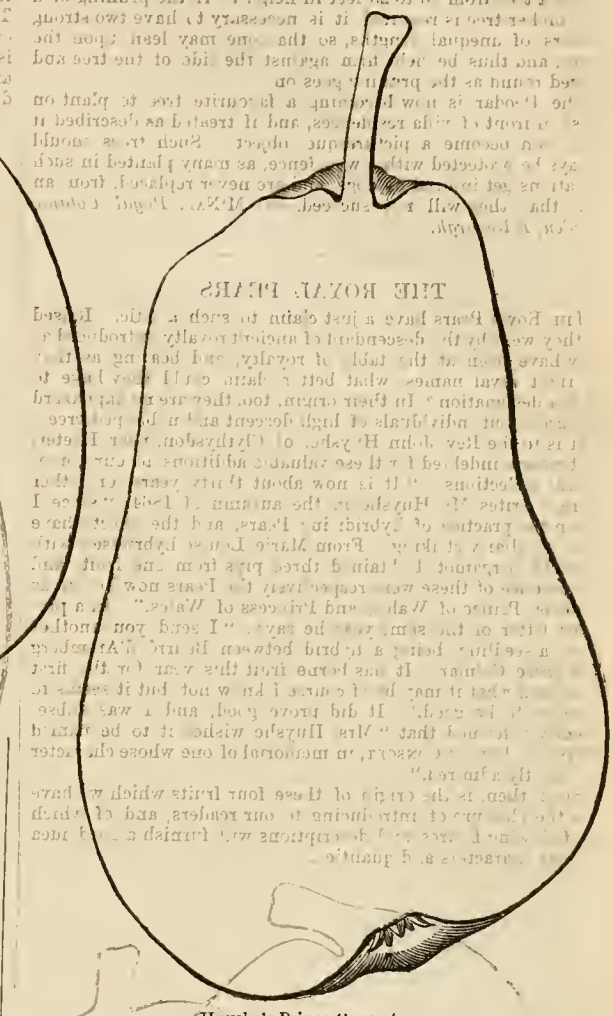
Huyshe's Princess of Wales.

from Beurré d'Aremberg fertilised by Passe Colmar. It is a noble Pear, of large size, and unusually bossed and uneven in its outline. The skin is grass-green even when ripe, and sometimes acquires a yellowish tinge, and very much covered with russet, exposing the green ground only in mottles. The flesh is yellowish, rather coarse-grained like that of Beurré de Rance, very juicy and melting, but not buttery; sweet, vinous, and with a very powerful melon or vanilla flavour, which is not only peculiar but highly agreeable. It is a splendid Pear, and ripens in the end of November and the beginning of December.

With a liberality which we are sure will be appreciated, Mr. Huyshe has presented the entire stock of this admirable Pear to the Royal Horticultural Society of London for distribution among the Fellows. [Young trees as well as cuttings of it will be balloted for on the 5th of February.]

Such a measure of success as has attended Mr. Huyshe's efforts rarely falls to the lot of hybridisers. It is, however, but the reward of intelligence well directed to the attainment of a certain end. Not only is it necessary to select and carefully to hybridise the parents, but, says Mr. Huyshe, "I am careful now in sowing only the *round* pips, not those that are flat-sided. I have only one more tree, a hybrid between Beurré d'Aremberg and Passe Colmar, from a flat-sided seed, and the difference is quite wonderful."—(*Hogg's Gardeners' Year Book.*)

Huyshe's Prince Consort.—This is the most recent of Mr. Huyshe's seedlings, and, as has been already stated, is of a different parentage to the three preceding, having originated



Huyshe's Prince Consort.

RED SPIDER ON WALL TREES.

I have long used a wash with soft soap in it to paint the trees, and it answers admirably, though it does not prevent red spider. Can I not, by mixing with the lime and soot for washing the wall some small proportion of coal tar, or, if that would be injurious, say of some other stuff as disagreeable to insects, form a poisonous wash, which would deter even red spider from laying eggs on the wall, and at the same time be innocuous to the trees?—H. H.

[It will not do to mix even the smallest portion of coal tar in your wash for the walls. It would be injurious until so thoroughly dried that it would give off no deleterious fumes, and when it came to that condition it would not deter red spider and other insects from depositing their eggs. We know of no material, poisonous or otherwise, that will keep insects from doing so, as the substances which would deter insects would, we fear, also hurt vegetation. You rightly judge that red spider is deterred by sulphur, but that is chiefly by the fumes sent off by heat, as the red spider will be as merry as possible, will make its webs, and deposit its eggs amongst nodules of pure sulphur. If a strong heat played on the sulphur the insects would then be rendered uncomfortable, but even then we have found them seemingly enjoying themselves on it about 3 feet from the glass. When a wall is plastered with sulphur, and a strong sun plays on it, the fumes then given off are disagreeable to them.]

IMPROVED SADDLE-BACK BOILER.

In your answers to correspondents at page 491, December 25, you state that "one improvement of the saddle-back would be a stout three-inch pipe connecting the two sides of the boiler at the end farthest from the furnace door; . . . one tap would then empty the boiler." I have seen this plan adopted several times in different places, but it always proved unsatisfactory. The pipe, being so much exposed to the direct action of the fire, soon gave way, and, of course, a flaw in any part is fatal

to the whole. The pipe was burnt away while other parts of the boiler were comparatively good. All the advantages of a connecting pipe, and others, are secured in the terminal saddle boiler without this serious drawback. The water freely circulates between the back piece and the sides, both top and bottom, so that a tap fixed in any part effectually empties the whole. Mr. Abbey, speaking of this boiler, says (Vol. X., page 326), "This is the greatest stride made for a long time in heating by hot water with the saddle boiler."—T. J.

THE ROYAL HORTICULTURAL SOCIETY'S EXHIBITION AT BURY ST. EDMUNDS.

The following is the official list of the special prizes which will be offered for competition at the above Exhibition :—

	£	s.	d
Royal Horticultural Society.—A Silver-gilt Cup, for the best and most effective group of 20 Plants—10 Foliage and 10 Flowering plants	25	0	0
N.B.—These will be arranged by the exhibitor, and in accordance with his own taste; he will be required to find his own stands if he considers them necessary.			
County Cup, for the best 9 Fuchsias in 13-inch pots	7	7	0
County Cup, for the best Stove or Greenhouse Plants in Flower	3	3	0
County Cup, for the best 3 Pine Apples, distinct	5	5	0
Ladies of Bury —Silver Cup, for the best 12 Orchids	20	0	0
Second Prize.—Silver Cup, for 12 Orchids	7	7	0
Town of Bury.—Silver Cup, for the best 12 Ferns, native or exotic. Pots not to exceed 12 inches in diameter. (Amateurs.)	10	10	0
Town of Bury.—Silver Cup.—12 Ferns, native or exotic. (Nurserymen.)	10	10	0
Town of Bury.—Silver Cup, for the best 6 Lycopods, distinct	5	5	0
Town of Bury.—A Watch or Cup, for best 3 Window Plants, grown by a Mechanic or Labourer	3	3	0
Town of Bury.—Silver Cup, for the best three groups of Fruits and Flowers for the decoration of the dinner table	10	0	0
N.B.—It is not necessary that Fruit and Flowers should be mixed in all the groups. The prize will be awarded by a jury of ladies.			
The Borough Members for Bury.—Silver Cup, for the best Hand Bouquet for Ladies	6	6	0
Second Prize.—Ditto	4	4	0
These prizes will also be awarded by a jury of ladies.			
Ipswich Town Cup, for the best 6 pot Vines, in fruit, 3 kinds..	5	0	0
Ipswich Town Cup, for the best 12 Orchard-house Trees, in fruit, not less than 6 distinct kinds. It is not necessary that the fruit should be ripe in this class	10	0	0
Eye Horticultural Society.—Silver Cup.—For the best 24 Cut Roses on single stems, grown by an amateur, a member of any Horticultural society in the County of Suffolk	10	10	0
Town of Stowmarket.—Gold Medal, for the three heaviest bunches of Grapes	10	10	0
Woodbridge Horticultural Society.—Silver Cup, for the best 12 cut blooms of Picotees, grown by an amateur	5	5	0
Suffolk Gardeners' Silver Cup, for the best 12 Cut Roses, grown by a Suffolk Gardener	5	5	0
Second Prize for Ditto.—Silver Cup	3	3	0
Suffolk Gardeners' Silver Cup, for the best 12 Seedling Variegated Pelargoniums of 1866 and 1867	10	10	0
Suffolk Gardeners' Cup, in honour of Mr. D. Beaton, for the best collection of Bedding Plants	5	5	0
Rev. Frederick Cheere, President of the Bury Horticultural Society.—Prize, for the best 12 Pelargoniums, Show or French	10	10	0
Mr. Samuel Barrett Hardwick.—A Watch, for Cottagers, for the best collection of Vegetables	3	3	0
Mr. Samuel Barrett Hardwick.—A Prize, for the best-cropped and best-kept Allotment Garden within the borough of Bury	1	11	6
Second Prize, for the second best ditto	1	1	0
Thetford Horticultural Society.—Silver Cup	10	10	0
Gardeners' Chronicle Prize.—Silver Cup.—For the best collection of Fruits and Vegetables, made up as follows:—Of Fruits, any five of the following eight kinds: Grapes, Melons (2 fruits), Strawberries, Gooseberries, Currants, Raspberries, or Apples (of the crop of 1866). Of Vegetables, any eight of the following fourteen kinds—one basket or bundle of each:—Peas, French Beans (or Scarlet Runners), Broad Beans, Cauliflowers, Cucumbers (1 brace), Summer Cabbages, Early Carrots, Turnips, Artichokes, Onions, Spinach, Rhubarb, Potatoes, or Mixed Salading	20	0	0
Journal of Horticulture Prizes.—Two first Prizes of the value of £10 10*s.* each.—For the two best Desserts, consisting of not less than seven kinds of Fruits of 1867, arranged as for the table, combining quality of fruit with taste in arrangement.—Open to Gentlemen's Gardeners and Amateurs only	21	0	0

NOTES AND GLEANINGS.

Judging from the number of letters we have received from subscribers complaining that they did not receive their last Number on the usual day of publication, it would appear that they did not observe the announcement in the previous Number that that day would thenceforth be Thursday. This, which was the original day of publication, was abandoned for a time to meet the convenience of a former publisher; but the reasons for publishing on Tuesday having ceased, and the day itself being exceedingly inconvenient from its following so soon after Sunday, we have determined that in future the day of publication shall be Thursday.

—— The Anniversary Meeting of the Royal Horticultural Society will be held at South Kensington on the 12th of February at three o'clock for the election of the Council for the ensuing year. We find the retiring members to be Sir Arthur Buller, Hon. William Cowper, and Mr. Wilson Saunders; and the gentlemen who are recommended as their successors are, Hon. C. Grey, Mr. Wentworth Buller, and Major Trevor Clarke. It has been said, "There is no Rose without a thorn;" and while we have reason to congratulate the Society on the return of an ardent horticulturist in the person of Major Clarke, by an inexorable law we have to regret the loss of Mr. Wilson Saunders, without whom in its councils none of our metropolitan scientific bodies seems complete. Let us hope that by another revolution of the wheel of time the hour will come when we shall again have the benefit of his great experience and mature judgment.

—— A substitute for the ordinary cloth shreds for nailing trees to walls has been sent us by the Rev. W. Kingsley, of South Kilvington, which for durability is infinitely superior to that article. It consists of the clippings or refuse of the india-rubber cloth, of which india-rubber hose and similar articles are made. Besides its durability and perfect pliancy, it has the advantage that it can be cut into shreds of the narrowest width, and may even be made into thongs by which small shoots can be tied. We believe it is made at Leeds, but wherever there is a manufactory of india-rubber fabrics, it will, in all probability, be obtained.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Trenching and manuring must now be carried on in a systematic manner. Every piece of ground that becomes vacant should not be trenched and manured indiscriminately, but with reference to the future crops; some of these will require no manure, others need much, and almost all require some peculiarity in the mode of preparation. Lose no opportunity of bringing the soil into good working condition for the crops which must soon be committed to it. A generous soil always pays well for the extra labour of frequently turning and knocking it about. *Asparagus*, a fresh bed should now be planted; a very considerable proportion of leaves should be used in the formation of the bed. The beds in cutting should have air freely admitted during the present mild weather. *Beans*, a crop should be planted in boxes or pots, which should afterwards be placed in a forcing-house. At the same time, a crop should be planted in the open air, when the ground is in good condition. *Carrots*, make a sowing of Early Horn on a slight hotbed, either to succeed the former sowing recommended, or to come in for a first crop. When the soil is light and dry, a sowing may be made on a south border. *Cucumbers*, as soon as the fruiting-bed is ready for the plants, make a hole in the dung beneath the centre of every light, and lay a few fresh-cut turves in each; afterwards lay a sufficient quantity of light soil upon them to raise the plants, when planted, near to the glass, then cover up and give air according to the state of the bed. *Onions*, those who are short of old ones, or who wish to grow some to a large size, should now sow White Spanish in a box, which should be placed in a forcing-house. The Underground sort should now be planted. *Peas*, sow in pots or boxes for planting out in March; also, sow two crops in the open garden, one of an early sort, the other of an approved sort, which does not come in so early. *Radishes*, sow another crop in a frame, where there is a little bottom heat, or they may be sown where Potatoes are planted. A crop should also now be sown on a south border. Cut and prepare Pea-sticks for use; lay them flat in heaps, and place some weighty logs upon them to press and keep them flat and spreading.

FRUIT GARDEN.

When orchard trees are infested with insects or moss, the bark should be well scraped with a blunt tool, to remove as many of the larvæ of insects as possible, after which the parts should receive a coat of hot lime and soot in equal quantities, mixed with urine until it attains the consistency of thick paint. This composition should be well rubbed into the crevices

of the bark, in order to make sure of its reaching every hiding-place of the enemy, and if a little cow-manure were worked up in the composition, it would be useful in causing it to adhere better. It is a tedious process to properly cover large, old trees with this, but its effect in clearing them of insects will repay the trouble, and an occasional coat to young trees will be useful in keeping them clean. Where Filberts are brought under the dominion of the knife and spade, which is by far the best method of cultivating them, let all suckers be effectually removed, and let some manure be forked in about the trees. Shorten all the strong shoots of last year's growth, but do not interfere with the small ones, as it is from these that the nuts are principally produced. It is better to thin out the large branches if they are crowded with wood.

FLOWER GARDEN.

In the absence of frost, prune hardy Roses; reduce the wood according to the luxuriance of the tree, but take into consideration its tribe and habit. Finish planting the hardy sorts, and protect their roots. If the removal of evergreens has been neglected, it may be performed during mild, moist days. Preparation should be made in the pinetum to receive any proposed addition to the collection. If the natural soil be indifferent, trench it to the depth of 3 feet, and allow a diameter of 6 feet, raising a mound 18 inches above the surface to receive the plant; a compost of turfy loam, decomposed vegetable matter, and sand, may be advantageously employed. The late severe frost will test the hardiness of our late importations of Coniferæ.

GREENHOUSE AND CONSERVATORY.

The continuance of unfavourable weather will not allow of any essential variation of temperature here. The precautions previously recommended in regard to allowing exterior circumstances to govern in a measure the temperature within the house may be insisted on. Should high winds prevail, little air need be admitted. Few of our glass houses are so constructed as totally to exclude air; aided by the pressure of strong currents, it will be insinuated through every crack and crevice, and the necessity for admitting it by other means obviated. Cinerarias and Calceolarias will require a liberal supply of water, and possibly increased pot-room. Pelargoniums must be cautiously encouraged to activity. The soil intended for greenhouse plants should be prepared and sweetened by several turnings, and a sufficient supply for immediate use should be stored in an open shed. Heaths have a beautiful habit of growth, and where a tolerable collection is kept some are in bloom every day in the year. If any free-growing variety requires a larger pot, repot it by all means. Water with care, give air freely. Be particularly cautious with fire at all seasons, even when frost occurs it must be very moderate indeed. At this season many species of Epacris, Pimelea, Correa, Polygala, and Boronia are in great beauty. As they go out of flower cut them back, clear them of their dead flowers, and place them in the cold pit. Where Orange trees are grown to decorate the flower garden in summer, care should be taken to prevent their beginning to push previous to their removal to the open air, and this more especially if the trees are wintered in a dark-roofed house. Where such happens the young leaves have always a thin flabby appearance, and soon turn brown after the plants have been set out of doors; whereas, if growth is prevented until the trees are in the open air, the foliage will bear any amount of sunshine and still look green and healthy. Fuchsias are also a tribe of plants which must be looked to without delay where fine specimens are required. Shake the old plants out, reduce the roots, and repot them; then introduce them into the forcing-pit at a temperature of about 60°, and as soon as you can obtain cuttings an inch or two long strike these, and grow the plants on as quickly as possible, remembering that if you want large plants they must be grown to a considerable size before they show bloom. For soil use light, turfy, sandy loam, with turfy peat, half-decayed leaf mould, and some sand.

STOVE.

For the present place a few pots of the early-flowering Gesnera zebrina in the resting corner to ripen off gradually for early flowering again. Select a few Gloxinias and Achimenes in variety, shake them out, and pot the former in open turfy loam, heath soil, coarse charcoal, and sharp sand well incorporated, and do not pot too firmly. The Achimenes tubers should at first be placed in pans thickly, and potted singly as they push, in leaf mould and light loam in a very coarse open state, with a fourth of charcoal added. These two tribes of plants delight in a moderate bottom heat, and should by all means be started on bottom heat. See that no plant is suffering from want of water. If the green fly prevails smoke occasionally with tobacco, and see that no other kind of vermin is encouraged.—W. Keane.

DOINGS OF THE LAST WEEK.

Amusements on the Ice.—Cleaning and brushing ponds from snow for skating and other amusements formed a small portion of the work done. Like the rest of the community, our attention has been directed to the sad and fatal accidents that have taken place by the breaking of the ice this season, and as all contributions of experience may be useful in avoiding such evils for the future, we will merely mention a few of the results of a rather extended observation.

1st, Ice formed thinly on the surface of water, and considerably increased in thickness by the gradual melting and freezing of snow over the surface, is never so strong in proportion to its thickness as ice formed from water only.

2nd, When it is necessary to cut holes in ice, it should be at the farthest point possible from the place that curling, skating, and sliding are carried on.

3rd, We should object to cutting round the sides of ice, over deep water especially, as in its case we never knew an instance of ice rising, and leaving a space for air between itself and the water, although we have bored holes on purpose some scores of times; but in water so shallow as from 8 to 12 inches in depth, in severe frosts we have often found the ice rise in the centre considerably above the water, and especially if the reservoir was rather small. This we believed was partly owing to the resistance offered by the sides of the banks to the expansion of the ice. Such ice not resting on the water would not bear the weight that ice in contact with water would do, but, so far as we recollect, we know of no instance in which this rising took place in water from 3 to 6 or more feet in depth. We frequently have a rather sharp frost during the night, after a drizzling afternoon, and next morning many ruts on the road will present small planes of ice, even though there is no water left beneath them; but the ice in such cases is more brittle than that which is supported by water, and this slight circumstance confirms our observations on ice over large and deep reservoirs of water.

4th, When ice is to be treated for the amusement and the healthy exercise it will afford, the reservoir will be the most useful, and the most quickly frozen over, in proportion to its open exposure and shallowness—say from 12 to 18 inches in depth. This would not be a sufficient depth for water used for ornamental purposes, keeping waterfowl, &c., as well as for amusement; but in all public waters used for these two purposes, and where there are the means of letting off the water, the depth should be from 2½ feet at the sides to 4½ feet in the centre, where there should be a culvert, marked by posts, 2 feet deeper still; the whole bottom to be macadamised, or concreted; the mud when it has collected to be cleared away by the culvert; and then if the most venturesome receive a good drenching at times, there will be little likelihood of any loss of life.

KITCHEN GARDEN.

Here the most of the work has been attending to vegetables under protection, as Lettuces, Radishes, Endive, Asparagus, Sea-kale, Rhubarb, and Mushrooms, and trenching up some ground that had a little littery dung spread over it, as everywhere else was too hard for even a pick to enter. There was only a day or two in which such work could be done, as after the snow it would have been unsuitable, for turning in ground a little crusted at the surface is very different from turning snow down to the bottom of a trench. It would require more than a midsummer's sun to restore such ground to a genial warmth.

FRUIT GARDEN.

The weather being dry, we did much pruning in the orchard, opening the centre of trees and shortening the tops to bring the fruit more within reach. Treated differently a few trees of soft Codlin Apples, and, therefore, of no great value in the kitchen garden, meaning to remove them some day, and at present, to prevent their doing injury to the undercrops, pruned off the lower drooping branches. These trees generally produce heavily, but their fruit is but little cared for when more firm Apples can be obtained for sauce, pies, or puddings. The snow being light and dry, a good opportunity was presented, not only for pruning, but for carrying away all the cuttings whilst the ground was hard, and thus we have obtained a good

heap, or stack, which will be very useful for gardening purposes, lighting fires, &c. Daubed the cut parts with a paint of cowdung and clay.

The fall of snow afforded a second opportunity to give our orchard-houses a good smoking with bruised laurel leaves, and a repetition of the proceeding will be wholly unnecessary. The roof was so covered with snow that only a little smoke escaped next the wall at the top, and that was trifling. The snow became discoloured with the smoke, and retained a strong scent of the laurel leaves even when melting in heaps in front of the houses on the 23rd, when there was the commencement of a gentle thaw. Proceeded with washing the trees, well washing the wall with hot soap water, and then with limewash toned down with lampblack to take off the bright white of the lime. If we be as little troubled with insects as we were last season, we shall be quite satisfied.

Open Walls.—The weather prevented all work here except a little pruning on fine days; the snow hung on the trees pretty well until the 23rd, and that partly kept us from doing what we intended, namely, syringing the trees with warm water containing either a little salt in solution, or enough quicklime to give the trees and walls a coating. This we have long proved good for cleaning the trees and walls of moss, and preventing the attacks of many insects and snails, when followed by a sharp frost. If salt is used, no more should be employed than enough to make the water saline, say a handful of salt to five gallons, for if at all strong it will make the wall moist, and if the bricks or stones are old and soft, it will cause them to scale off and become softer and powdery. We had no quicklime at hand, or we would have contrived to have had this work done. It always proves most effective, even to loosening scale on the bark, if followed by a sharp frost. Warm water will be better than cold. Of course, when lime is used, the trees and wall will look whitish afterwards, but that is mostly concealed when the leaves open. If the colour is objected to, it may be darkened with a little soot.

Peach-house.—To keep the frost out from lots of plants, even the necessary little fire heat is beginning to have an effect on the trees, and, therefore, as we have no wish to hasten them on in such weather, we will remove forward Cinerarias at the first favourable opportunity. We removed as many young Pelargoniums, as would set two long shelves at liberty, and filled them with Strawberry plants from frames in the mild day or two between the frosts, filling the frames again in which there is just the mildest bottom heat. The few fruit of Black Prince Strawberry from a low pit were deficient in flavour, owing to the sunless weather, and plants in fine bloom have not set over-well from the same cause. We have no doubt they would have done better on shelves, in a steep-roofed house, where they could have had all the light which the season would have given them. Our Peach-house is at a pitch of about 45°, and there we have no trouble with Strawberries setting, but less or more trouble with early Strawberries in all houses, and especially pits, with low, flat roofs. A low house is better than a pit for this purpose, because containing according to its bulk more air, and because the light passes into the house past the Strawberry plants.

We have a lot of plants in a pit set on the top of a bed, near enough the glass, and where help from fire heat can be given them, and we expect if left there they will do tolerably well; but they will require more watching now than if they had been set on a stage, or boards, in the same pit, and we would not expect them then to do so well now, as if ranged on shelves in a house with a steep roof ranging from 45° to 35°. A couple of months after this the flat-roofed pit and frames will answer much better than now.

ORNAMENTAL DEPARTMENT.

The last charred and clay-burned heap was wheeled on the ground in the frosty mornings, and another heap nearly finished, that will clear up everything that can be so applied for the present. We hope after the 23rd, if the thaw fairly set in, to move a great many plants, and obtain more room for potting. In the meantime went on potting Fuchsias, &c., in soil warmed by standing in the Mushroom-house, over furnaces. Just as at this season it would be injudicious to supply water colder than the temperature in which the plants are growing, so nothing is so successful for covering plants with insects than fresh-potting them in soil much colder than that previously about their roots. In both cases, the water and the soil should be a few degrees warmer than the atmosphere in which the plants stood.

As respects the general management of plant-houses and pits see notices of previous weeks. The *watering* in such weather should be done in no careless manner. As a general rule, the above precept as to the water being quite as warm as the atmosphere, ought never to be departed from. The second great rule is, never to water a plant until it requires it, and then to give enough to reach every fibre, but not to run much through the pot, as, unless when the air wants moistening, in very severe weather the less water that is used the better.

It will often happen, even when the roots are damp enough, that plants will flag under a bright sun, when they have passed through a week or even a few days of close cloudy weather. Under such circumstances the whole processes of vitality were working in a most languid state, and, therefore, roots and leaves were acting in perfect harmony, but a bright sun breaks out suddenly, and the quickened activity of the leaves in evaporating cannot at once be met by the action of the roots, though moist enough, and flagging and signs of distress follow. The uninitiated at once pour water over the soil that was moist enough before, and which leaves it afterwards too moist, to be cooled inordinately by evaporation, and thus frequently pailful after pailful is used without quite redressing the evil, when a few quarts thrown as a sort of mist over the foliage would prevent all the mischief and most of the labour, and leave the soil in a more healthy condition. In a bright sun the leaves would soon dry, and, therefore, no danger would ensue from the foliage being left in a damp state at night. Such a slight syringing will most commonly be required during the forenoon. A slight shading would often answer equally well, but there is no remedy so quick, so refreshing, and so natural as a skiff from the syringe under such circumstances; and though it might injure some very tender plants with delicate foliage, it is very seldom that any harm will thus result to the generality of plants. When thus syringed in sunshine, there would be a little air in the house, and under such circumstances we have never realised among plants in general those evils of burning, spotting, and lens-blotching of leaves, which are so much enlarged upon as the consequence of the sun shining on damp foliage. Of course, we would not advocate this system to any great extent, and especially in summer, for then it would be less needed, as the changes from dullness to brightness are not so rapid as in winter and early spring; but there can be little doubt, when a bright day succeeds several of a dark dull character, that a skiff from the syringe will often be better for plants that rapidly perspire in sunshine than repeated drenchings at the roots when the soil is moist enough.

These, and the remarks of a visiting gardener, have reminded us of what is worth noting, as respects watering. In a large nursery establishment, a good many years ago, we were employed turning out a great many plants in rows, in a hot May. The plants were turned out, the trench about half filled, and firmed against the roots, and well watered, and then the dry earth was put over all, to prevent evaporation and yet secure plenty of moisture and coolness about the roots. The nurseryman on passing seemed pleased, asked us why we did the work so, and was satisfied—nay, more, said something very pleasing about thought and work going together. In a similar establishment lately, in an equally hot May, a young man had turned out Mignonette from pots into boxes, had packed them well, and watered them well from the spout of a pot; but as the sun was powerful, and the boxes stood in the sun preparatory to their being removed to a sunny verandah, the tops of the plants began to flag a little, and the young man was just giving them a whisk from the rose of a watering-pot, to refresh them, and check evaporation, when one of the firm passed, and ordered some one else to take the watering-pot from the young man, as he knew nothing at all about watering. Now, if the young man had intended to water the boxes in that way, the proprietor might have been right. As it was, inquiry into the subject would have shown that he would have found reason to praise, instead of to blame. Whoever again deluged the roots of such plants was only throwing water away. A very little on the foliage would arrest evaporation, and this was all that was wanted. But for the time it would take, watering from the rose is often better than watering from the spout, because the water from the rose takes so much more air along with it. Time, however, is an objection to such a mode in general cases, and, no doubt, the sweeping condemnation of the nurseryman was based upon it. The young man was actually attending in the best way to his employer's interests, when he received the reproof. A little inquiry would often save much unpleasantness, and the greatest and the wisest are only fallible at best.—R. F.

COVENT GARDEN MARKET.—January 30.

Improved supplies, and some difficulty in effecting clearances at former rates. French importations comprise Lettuces, Endive, Artichokes, young Carrots, Tomatoes, and Asparagus. Forced vegetables consist of Asparagus, Kidney Beans, Sea-kale, and Rhubarb. Potato trade very unsettled, good samples realising rather high rates.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ..... ½ sieve	2	0	to 3	0	Melons..... each	2	0	to 4	0
Apricots ..... doz	0	0	0	0	Nectarines ..... doz.	0	0	0	0
Cherries ..... lb.	0	0	0	0	Oranges 100	5	0	10	0
Chestnuts ..... bush.	10	0	18	0	Peaches..... doz.	0	0	0	0
Currants..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	3	0	6	0
Black ..... do.	0	0	0	0	kitchen..... doz.	2	0	4	0
Figs ..... doz.	0	0	0	0	Pine Apples ..... lb.	4	0	8	0
Filberts..... lb.	0	0	0	0	Plums ..... ½ sieve	0	0	0	0
Cobs..... lb.	0	9	1	0	Quinces ..... doz.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Raspberries..... lb.	0	0	0	0
Grapes, Hothouse..lb.	6	0	8	0	Strawberries ..... lb.	0	0	0	0
Lemons 100	5	0	10	0	Walnuts..... bush.	10	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... each	0	6	to 0	8	Leeks ..... bunch	0	6	to 0	0
Asparagus .... bundle	6	0	10	0	Lettuce ..... per doz.	2	0	3	0
Beans, Kidney, per 100	3	0	4	0	Mushrooms .... pottle	1	0	2	0
Scarlet Run, ½ sieve	0	0	0	0	Mustd. & Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions..... per bushel	4	0	5	0
Broccoli ..... bundle	2	0	3	0	Parsley..... per sieve	4	0	6	0
Brus. Sprouts ½ sieve	3	6	0	0	Parsnips..... doz.	0	9	1	3
Cabbage ..... doz.	2	0	3	0	Peas..... per quart	0	0	0	0
Capsicums..... 100	0	0	0	0	Potatoes..... bushel	3	6	5	0
Carrots..... bunch	0	6	0	8	Kidney..... do.	5	0	0	0
Cauliflower ..... doz.	4	0	8	0	Radishes doz. bunches	1	0	1	6
Celery ..... bundle	2	0	3	0	Rhubarb ..... bundle	0	9	1	6
Cucumbers..... each	1	0	2	0	Savoys ..... doz.	3	0	4	0
pickling .... doz.	0	0	0	0	Sea-kale ..... basket	2	0	3	0
Endive ..... doz.	2	0	0	0	Shallots..... lb.	0	8	0	9
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	5	0	0	0
Garlic ..... lb.	0	8	1	0	Tomatoes..... per doz.	4	0	0	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	6	0	0
Horseradish .. bundle	4	0	6	0	Vegetable Marrows dz.	0	0	0	0

TRADE CATALOGUES RECEIVED.

Carter & Co., 237, 238, and 261, High Holborn.—*Gardener's and Farmer's Trade-Mecum.* Part I.—*Flower Seeds, Plants, and Bulbs.* Part II.—*Vegetable and Agricultural Seeds.*

Barr & Sugden, 12, King Street, Covent Garden, London, W.C.—*Descriptive Priced List of Choice Seeds for Flower and Kitchen Garden.*

Butler, McCulloch, & Co., Covent Garden Market, London, W.C.—*Spring Catalogue of Seeds for the Kitchen Garden and Flower Garden.*

F. & A. Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of Vegetable and Flower Seeds.*

Downie, Laird, & Laing, Stanstead Park, London, and West Coates and Pinkhill, Edinburgh.—*Catalogue of Garden, Flower, and Agricultural Seeds; Implements, &c.—Descriptive Catalogue of Roses—Descriptive List of French Hybrid Gladioli.*

Wheeler & Sons, Gloucester.—*Wheeler & Sons' Little Book, or Select Seed List.*

William Pontey, Huddersfield.—*Nursery List*, being a Catalogue of Forest and Ornamental Trees, Shrubs, &c.

Thomas Sampson, Preston Road, and Houndstone, Yeovil.—*Catalogue of Flower, Vegetable, and Agricultural Seeds.*

John Scott, Yeovil and Merriott Nurseries, Crewkerne, Somerset.—*Catalogue of Vegetable, Flower, and Agricultural Seeds.*

Robert M. Stark, York Road, Trinity, Edinburgh.—*Catalogue of American, Alpine, and Herbaceous Plants.*

Henry Cannell, Fuchsia Nursery, Station Road, Woolwich. *Select and Descriptive List of Fuchsias, Verbenas, Petunias, &c.*

Peter S. Robinson & Co., Trinity Nursery, and 33, St. Andrew Square, Edinburgh.—*Catalogue of Garden and Flower Seeds.*—*Catalogue of Forest Trees, Shrubs, Roses, &c.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

Back Numbers (*G. B.*).—If you send us a list of the Numbers you require, we will let you know whether we can supply them.

Boiler for Heating Three Houses (*Weymouth*).—A cast-iron saddle boiler 30 inches long, 24 inches high, and 22 inches wide, will suit you. If you wished the middle house to be the hottest the boiler could be placed behind that, and the heat be taken to the other houses right and left. If the houses were intended to come in in succession from end to end, we would place the boiler at what was to be the earliest end, take a flow and return pipe all the length of the three houses, and from these have valves to admit circulation to the pipes of each separate house as wanted. If you wished to have early forcing in all three houses, averaging 20 feet by 11, then we would advise a boiler 6 inches longer.

Alkaline Manures for Potatoes.—*D., of Headcorn*, asks, "Has your correspondent 'D.,' of Deal, tried any of those alkaline manures recommended in February last by "W., *Ross, Herefordshire*," for growing mealy Potatoes? If he has, or any other correspondent, will he oblige, through the Journal, by stating the result of his trial, as the season for Potato planting is approaching?"

Plunging Material (*Novice*).—We could hardly say why the sand for plunging in did not answer, unless we knew more of the particulars. It ought to have answered over your tank if you have enough of heat. We presume your large slates are bedded on the tank, if so, no moisture will escape. In that case we would cover over with 6 inches of rough clean cinders, or clean small stones, and on that place finer ashes, sand, or cocoa-nut refuse, for plunging the pots in, with some upright pipes going through the sand or other material to the slate, for pouring water down when a moist heat was wanted, likewise for allowing the heat to rise into the atmosphere in which the cuttings are. If you use cocoa-nut refuse, do not let the bottom of the pot rest on much of it. If you use sawdust, lift the pot at times, or the bottom hole may become firmly fastened up, and see that no fungi grow. If you have plenty of heat nothing is more simple or cleanly than sand. It is difficult to make the heat pass through cocoa-nut fibre, especially when dry. Perhaps you did not have enough of top heat. We shall be glad to assist if we know more of your practice, the size of the bed and tank, the mode of covering the cuttings, the size of the house, the mode of giving top heat, and other particulars.

Propagating and Cucumber-house (*A Market Gardener*).—Your proposed arrangements will do either for propagating or Pines, but you will not have heat enough for early work. If your flue go along one side, you would require three pipes on the other side, two flows and a return, and we would prefer three pipes below the centre bed to two pipes. If these centre pipes were covered with 6 inches of clinkers or brickbats, placed as hollow as possible, and covered again with clean small stones, you could put your plunging material, either for cuttings or Pine plants, above. In the side walls opposite the hollow clinkers, &c., you could have five or six plugs on each side to let heat out, and let moisture in when you deemed it necessary. With this arrangement two pipes on the side might do. It would be as well if the centre bed were not more than 30 inches from the ground. You would need glass for many subjects in the propagating-bed. If you do not object to the glass division as to expense, it would be as well to divide the house into two, as you could regulate the treatment better as respects shading, air-giving, &c.

Vine Border Soil (*H. J.*).—The soil you enclosed, pared from the surface of an old meadow, is quite suitable, but should be mixed with some calcareous addition, such as bricklayers' limy rubbish and bones broken into small fragments.

Sowing Mistletoe Seed (*J. E. D.*).—Cut a triangle in the bark on the under side of a branch down to the wood, raise the point of the triangle, and insert the seed between the bark and the wood. No application or tying of any kind is needed.

Strawberry Plants Injured by Frost (*Fragaria*).—Strawberry plants in 32-sized pots that have stood out during the late severe frosts, and the roots of which seem all killed on the outside of the balls, had better be plunged as you propose, in a hotbed, plunging the pots to the rim to excite root-action, and keeping the lights off in mild weather. You must not give the plants more than 50° of bottom heat to commence with, increasing it to 70° gradually, and you must not think of forcing the tops until the roots are in action, in fact, you ought not to attempt to obtain from the plants very early Strawberries.

Grubs in Vine Border (*H. J. C.*).—We do not think that the grubs will injure the roots of your Vines. If you will state whether you require the Apples for dessert or kitchen use, and in what part of the British Islands you live, we will name some that may suit you.

Black Alicante Vine (*J. Bryan*).—Any Vine can be grafted upon any other variety of Vine, but what the effect a Bowood Muscat stock would have upon a Black Alicante grafted upon it we cannot tell. We do not know where tarpaulin can be purchased. If we wished to cover a Vine border, we should use Croggon's asphalt felt, which is much cheaper.

Pine Apples Black Inside (*C. H. A.*).—Atmospheric moisture when so excessive as to create drip has a tendency to cause the lower pips of the fruit to become discoloured and black, and even to decay before the upper pips are ripe; but we do not consider it will affect the interior of the fruit farther than the pips are discoloured and flavourless. Blackness at the centre of the fruit is caused by the soil being kept too wet. To combine at this season size with good colour and flavour requires great care in cultivation—in fact, large size can hardly be attained without sacrificing something, and we have now for some years been less particular about it in winter fruit, and have consequently kept the atmosphere and soil considerably drier, and have been rewarded with fruit—less in size certainly, but equal in flavour to those ripened under more favourable conditions. Maintain a moderate amount of moisture, and water carefully at the root until the fruit is ripening, then keep considerably drier.

Stocks for Camellias (*A Constant Reader, J. H. D.*).—We do not know where stocks for Camellias are to be had. You may graft by the plan known as whip-grafting, and then plunge the pots in the hotbed. You may obtain Camellia seed of any of the principal London seedsmen, and if you sow it the plants will be ready for grafting in two or three years, according to the encouragement given.

Horse Carrot (*Idem*).—The best Carrot for horses, at least that most valued by stablemen, is the Red Altringham, and for cattle the Yellow Belgian.

Heaviest Bunches of Grapes (*Dodger*). — We conclude that the Judges at Bury St. Edmunds will require the Grapes to be ripe.

PRIMULA SINENSIS SEEDLINGS (*D., Newark*).—The pips are fine, and of good substance, but there are very many of the same colour and quite equal to them. The specimens now produced are endless.

HALF-INCH BONES FOR VINE BORDER (*Vine Border*).—You may obtain the bones you require for a Vine border from the London Manure Company, 116, Fenchurch Street, London.

SOWING MELONS, COCKSCOMBS, AND BALSAMS (*Idem*).—For fruiting and blooming in July you should lose no time in preparing a hotbed for the Melons and Cockscombs, which should be sown in the first week in March. The Balsams may be sown in the first week in April.

HOTBED FOR CUTTINGS (*Fred*).—It will answer to dig out the soil, set the frame on the ground, and fill it inside with hot dung. The soil should be dug out to a depth of 2 feet 6 inches, and in filling with dung bring the latter up to the lights, shake it out evenly, and beat and tread it firm. Put on the lights, in a week or so level the surface, and if the dung has sunk much fill up the frame to within 6 inches of the glass, and cover with 3 inches of turfy loam two-thirds and one-third leaf mould. Sift the soil, place the siftings over the dung before putting in the finer portion, and over the soil spread an inch deep of sand. You may make the bed in the end of February, and put in the cuttings early in March.

STAFF REQUIRED FOR A GARDEN OF TWO ACRES, GLASS, &c. (*Oxonian*).—A garden of two acres, one-half kitchen garden and the other half pleasure grounds and flower garden, four thousand bedding plants, three Peach-houses, each 20 feet by 12 feet, a vinery, and two houses for other purposes, pits and frames 60 feet long, and a conservatory 50 feet by 14 feet, will require, to keep it in good order, and have everything in its proper season, a working head-gardener, an under-gardener, a strong youth of 18 or 20, and a labourer.

LYCASTE SKINNERI (*Edwin*).—The most likely cause of the short continuance of bloom is keeping the plants in an atmosphere much too warm. A temperature of from 40° to 45° is ample whilst the plants are in bloom. It is not necessary to give much water, but once since they began blooming is too little, especially if the atmosphere is dry and hot. In a greenhouse or room they require very little moisture, whilst in a stove more is needed. Water more frequently. We cannot name florists' varieties of Azaleas, and, besides, your flowers were all smashed.

EXAMINATION OF GARDENERS (*Idem*).—Apply to Capt. Cockerell, Assistant Secretary, Royal Horticultural Society, South Kensington, W., stating what you wish, and he will furnish the requisite information.

VINE BORDER (*Charles*).—We should have liked the border better if it had been wider than 7 feet, but it will serve the Vines for many years if the roots be nourished by frequent top-dressings of rich compost. We would advise you to make a border on the outside of the house equal in width to that on the inside, and let the roots pass into the former through arches or apertures in the front wall. Plant the Vines inside, and confine the roots to the inside border for three years, then make the outside border.

GESNERA ZEBRINA SPLENDENS LEAVES CURLING (*Idem*).—The evil arises from an insufficient amount of heat and moisture in the atmosphere. Give the plants more heat and atmospheric moisture, and avoid wetting the leaves, and you will find that these will not curl. They do so naturally when they are becoming mature. Avoid cold currents of air.

PRUNING VINES (*D. W.*).—You have deferred pruning too long. It should be performed immediately, or soon after the leaves fall Prune to the third eye as you propose; but, the canes being well ripened, we should cut them in to two good sound eyes, or one, not counting the two embryo eyes at the base of each shoot, which is what we presume you mean by cutting at the third eye. One good plump eye is ample, and to that we would prune, not counting the embryo eyes at the base of the shoot. Your plan of allowing one shoot to bear fruit and another to grow for wood on the same spur is not good. It crowds the bearing-shoot too much, and impoverishes the border.

HARDINESS OF PEACH TREES (*Idem*).—The late severe weather has not injured the wood of our trees on walls, and it will not injure the wood of those in houses unless the buds have begun to swell and are on the point of expanding, and then not the wood of last year, but the present year's growth. A little fire during the late severe weather to keep out frost would not do any harm.

STRIKING VERBENA CUTTINGS (*Cestria*).—1, The pans or pots should be well drained, and, a little moss or cocoa-nut fibre having been placed over the drainage, filled to within an inch of the rim with turfy loam, leaf mould, and sand in equal parts; then fill to the top with silver sand so as to present a slightly rounded surface, but if silver sand cannot be obtained, river sand will do if not too sharp. 2, They strike best in a bottom heat of from 70° to 75°, and a top heat of from 65° to 75°. The atmosphere should be moist.

SPROUTING POTATOES FOR PLANTING (*M. J. E.*).—Your Ashleaf Kidney should be taken out of the "pies," weather permitting, early in February, and be placed in the boxes, eyes upwards, and it is best to place them only one layer thick. A box will hold a large number set on their ends. The boxes may be put in the chamber you mention, and an old sheet or similar light covering will be sufficient, but you may, if there is any likelihood of the Potatoes being frozen, cover them with straw. You must examine them frequently, and when the sprouts are half an inch long remove the covering, and harden them off by giving abundance of air before planting. If this is not done the sprouts are liable to be broken off in planting. The third week in March is a good time to plant them if the weather be favourable, and from that time to the first week in April. The Ashleaf Kidney is as good a Potato as any for a first early. Royal Ashleaf is a little better cropper, but is not so early by ten days or a fortnight.

FERNERY (*E. M.*).—We think your arrangements good. The flue carried along the front and one end will, if above ground and not covered by rockwork, be sufficient to keep out frost, and, indeed, maintain any temperature desired, and as you do not wish for Ferns that require a high temperature, a fine will serve you more economically than hot-water pipes. You may use Hartley's rough plate glass ⅛-inch thick. The height in front is too low, there should be 3 feet of wall and 3 feet of glass, so that you will have a door 6 feet high, and it should be 3 feet wide. The roof will have ample fall, if the front be 6 feet high. For so narrow and small a house it will be sufficient to have two ventilators in the back wall, each 2 feet long and 15 inches wide. All the lights may fixed, which will lessen the expense. We think the house will answer well. It will require shading from March to October.

PRIMULAS (*Richard Dean*).—The seedling Primulas you have submitted to us are charming things. Large, beautifully fringed, and richly coloured, they cannot fail to be valuable acquisitions. Of those which we particularly remarked, the most striking were *Splendens grandiflora*, a splendid flower of dark magenta crimson, and *Beauty*, a blush, feathered and suffused with deep pink, and with a deep yellow centre. Some are very beautifully flaked like Carnations, while others are spotted and freckled with colours darker than the grounds. We congratulate you on the possession of such a stock.

POTATOES.—"*A. B.*" wishes to be informed if Dawe's Matchless Kidney is the same as Webb's Imperial; also, is the Cheshire Early Pink Eye the same as that known in the north as the Early Pink Eye Kemp?

PEACH TREES IN ORCHARD-HOUSE (*R. W., Bristol*).—Continue to keep your house cool. The slower the buds are developed the more likely you are to have a good crop.

PASTURE GRASSES FOR AUSTRALIA (*C. S.*).—There are as many climates in Australia as there are in Asia. You should have mentioned the part of Australia. If not in the extreme north of that land any of our pasture Grasses will probably succeed as well as they do on similar soils in England.

SELECT CARNATIONS AND PICOTEES (*W. W.*).—*Carnations:* Admiral Curzon, Lord Rancliffe, Black Diamond, Lord Milton, Fanny, Sarah Payne, Premier, Squire Meynell, Firebrand, Sportsman, Ariel, and Friar Lawrence. *Picotees:* Mrs. Norman, Isabella, Amy Robsart, Lord Nelson, Mrs. Dodwell, Robin Hood, Mrs. May, Finis, Mrs. Barnard, Venus, Bertha, and Mrs. Fisher. These would cost from 2*s.* to 2*s.* 6*d* per pair. Any respectable florist could supply them or procure them for you. We cannot recommend dealers.

NAMES OF PLANTS (*J. C. S.*).—1 and 2, barren and fertile fronds of the same Fern—Cystopteris dentata; 3, Polystichum aculeatum, a small frond.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending January 29th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 23	29.650	29.525	52	34	37	37	S.	.01	Densely overcast; hazy, fine; slight rain.
Thurs. 24	29.442	29.437	54	34	37	37	S.W.	.04	Densely overcast; fine, with clouds; mild.
Fri. .. 25	29.766	29.368	42	34	36	37	S.W.	.00	Foggy; hazy clouds; very fine.
Sat. .. 26	30.061	29.840	53	38	37	38	S.W	.14	Hazy; uniformly overcast; rain at night; mild.
Sun... 27	29.955	29.845	50	47	38	39	W.	.00	Densely overcast; cloudy; overcast; warm for the season.
Mon... 28	29.962	29.797	53	30	40	42	S.W.	.00	Densely clouded in strata; rather boisterous; fine.
Tues. . 29	29 973	29.789	52	45	41	42	S.W.	.02	Fine; densely clouded; overcast; boisterous.
Mean	29.830	29.657	50.86	37.43	38.00	38.86	..	0.21	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY JUDGING.

IT appears that we cannot have a standard of excellence to guide us as to what birds are fit for competition. I would propose that each of our Judges should publish what he considers to be the standard of excellence in respect to Game and Game Bantams, as each arbitrator differs in opinion with respect to the classes. For instance, I took second and third prizes at our largest exhibition, and exhibited the same fowls again at one of our smaller shows, but in better condition, but did not receive even a commendation. How was it? I ask. Simply because they were judged by another arbitrator. I am really at a loss to know how to select my fowls for competition. I think you will coincide with me, that we want some definite information to guide the judges as well as us breeders.—A SUFFERER.

[Many alterations are desirable in poultry judging, but much

more forbearance is desirable on the part of losing exhibitors. They are naturally prone to magnify the merits of their own birds, and to diminish the merits of their conquerors. The birds of "A Sufferer" may have been excellent, but those which took the prizes may have been more excellent in the estimation of unbiased judges. As to the requisite points in all varieties of poultry, they are well known, and the duty devolving upon a judge is to estimate correctly the preponderance of excellence in all the points in each pen. Now, practice greatly facilitates this estimating, and, if for this reason alone, we wish that not more than half a score judges were selected, and that they were exclusively employed, the selection from them being left to the committee of the show. No suggestion was ever more fraught with dissatisfaction than that which recommends an increased number of judges, the increase being taken from local sources. Such an increase, without adding to the ability employed, would inevitably add to the risk of favouritism.—Eds.]

CHARACTERISTICS of the PRINCIPAL SORTS OF GAME FOWLS.

(*Continued from Vol. XI., page* 436.)

The sorts with the hen-tailed cocks have some of them been very celebrated in the north country for their fighting qualities. These birds are small in size, but very hard in flesh, and short in body; they were celebrated for their hard fighting and activity, and were quite equal to the best fowls in their fighting properties. They were of various colours—Polecats, Spangles, Piled, Partridge, Cinnamons, Furnaces, and other colours. They are now, I believe, very rarely if ever found.

Dark Greys, Brown Reds, and Cheshire Piles are the best and sharpest three sorts for fighting, the first two being also the two hardest sorts of all. Some of the Red-breasted Ginger Reds are quite as good as these three sorts, especially an East Suffolk breed of Ginger Reds, of which the cock birds are very red, and which I will describe a little as I go on with the other sorts in rotation.

I will now mention some of the least common sorts.

Polecats and Spangles are sometimes good birds. Cuckoos are not good in general. The Red Furnaces are marked with large fire-coloured patches on a white ground, and are quick and good in general. Mealy Greys are often good. Dark Birchens are too much mixed in blood to be a sportsman's bird, though often very good. Yellow Birchens are not good in general, though some strains are so. Blue Duns with yellow eyes and legs are the worst of all, being the softest and weakest of all Game fowls. White Game fowls are good and quick, and fight well when red-eyed and white-legged; when yellow-eyed they are not good birds. They are not used for fighting, though resembling the Piles in their qualifications. Black Game fowls are both slow and soft, perhaps slower than any Game fowls. The Brassy-winged Black cocks are the best cocks of this colour. The Furnace breed of Blacks are yellow-backed, and as good as any Blacks, but now quite rare.

Black-breasted cocks and Dun-breasted cocks are in general slower than all other colours, but when with red eyes they are good. No high-bred Game fowls have any other than black or red eyes. The yellow or daw-eyed Blacks are very inferior birds. Yellow-eyed Red Duns are also inferior birds.

Before mentioning the rest of the more common sorts, I will name the counties producing the best Game fowls; these are the northern and the midland counties, especially the latter:—

1. Lancashire.—The best Brown Reds, all others good.
2. Yorkshire.—Good Reds and Greys of both sorts.
3. Staffordshire.—Good Reds and Greys of both sorts.
4. Cheshire.—Best Piles, good Whites and Duckwings.
5. Warwickshire.—Black-breasted Reds and Brown Reds.
6. Shropshire.—Reds, Greys, Birchens, and Blacks.
7. Nottinghamshire.—Black-breasted Reds and Duckwings.
8. Lincolnshire.—Black-breasted Reds, Birchens, and Blacks.
9. Derbyshire.—Good Piles, Brown Reds, and Gingers.
10. Leicestershire.—Good Piles, Whites, and others.
11. Worcestershire.—Black-breasted Reds and Duckwings.

The southern counties have rather inferior birds, except London and its vicinity. Wales, Scotland, and Ireland have some good birds, Wales more especially so. Lancashire and Cheshire on the whole breed the best birds, as being lighter-fleshed and more active in general than any others. Birmingham and its vicinity is celebrated for its Game fowls, and Manchester for its Brown Reds; Chester for the best Piles in England. Newmarket was once very celebrated for its Game fowls, but is not so now. The four southern counties had the best Red Duns; and Cumberland and Westmoreland breed most Blue Duns, I have heard, though this colour is certainly rare, as are Red Duns now.

I have been acquainted with Game fowls since the year 1831, when a boy of eleven years old, and therefore have had experience enough to be able to give a correct opinion on all matters relating to them. The Lancashire Brown Reds have carried off more silver cups at exhibitions during the last six years than any other Game fowls. At all the early exhibitions the willow-legged Black-breasted Reds took nearly all the silver cups for the first few years.—Newmarket.

(To be continued.)

PROTRACTED DETENTION OF POULTRY AT EXHIBITIONS.

May I be permitted through your Journal to entreat the secretaries of poultry shows to be more particular in fixing the days for their exhibitions? Take Manchester for example—for a three-days show to the public, my birds had to leave home on Wednesday morning, December 19th, and were not returned till Wednesday night the 26th, an absence of eight days! I cannot learn when they were sent off on their return tourney, but being Christmas week they had been detained, jossed about, and starved, till they were more dead than alive; far too ill to eat, and had to be fed by hand for some days. Their plumage was broken and spoiled, and up to this time (January 11th), they are still suffering from the effects of the exhibition. I believe they had every attention at the Show, but why keep our pets confined in their pens over a Sunday, which is constantly arranged, and in this case over Christmas day as well? My poultry man said, "The birds are more knocked up from this Show than they have ever been before."—Exhibitor.

WANT OF COURTESY AND LIBERALITY.

I wrote on the 1st of January begging the Secretary of the Bristol Poultry Show to send me a catalogue; on the 4th I had not received one. The judging was completed at 2 P.M. on the 2nd. This was a peculiar hardship, as I was thus forced to make my entries for Walsall without knowing my birds' fate at Bristol, and I happened to be particularly anxious as to the judgment on a certain pen at Bristol, with a view to finding out whether that pen would be worth entering for Walsall or not. Also, I wrote and asked the Secretary for a ticket of admission to Bristol Show. He refused, though I exhibited nine pens. Can illiberality go much further?—An Exhibitor.

MUTILATING POULTRY AT EXHIBITIONS.

I saw in a recent Number of your valuable Journal a complaint by "An Exhibitor," who had the misfortune to have a bird spoiled, either in its transit to or at the late Exhibition held at Manchester. I sent two pens of fowls to the late Leeds Exhibition, and on their return I found both the cock birds minus a sickle feather; I examined the hampers, but neither of the feathers was in them. A worse case than this has come under my notice—that of a pen of Silver-spangled chickens. They were sent in perfect condition to the same Exhibition (Leeds), and on inspection on their return, one of the pullets was found to have lost every laced feather from both its wings. I will leave it to other exhibitors of more experience than myself to say if it was possible to strip the pullet of its lacing accidentally. Such cases as the above are becoming quite common. It is very galling to see birds in such a condition after so much labour has been spent upon them.—Thos. Wrigley, jun., *Tonge, Middleton, near Manchester.*

EXHIBITING BORROWED FOWLS.

Is this dishonest practice really carried out in the way alluded to by "Exhibitor?" Surely the best reply is publicity. Will "Exhibitor," as he knows several cases, mention the names? I was applied to once or twice some years ago, possibly by a member of the lending fraternity, as my warm reply seems to have put all such proposals at rest. There can

be no question to every straightforward mind that the practice is most dishonest. It is not only, as in your note to "Exhibitor's" letter, obtaining money under false pretences, but it is a robbery of the honour that but for the borrowed birds would go to other pens.—Y. B. A. Z.

POULTRY IN CONFINED SPACE.

In a Letter Box notice in the Journal of December 4th, Mr. J. R. Beyton asks if my eight hens have any run attached to my house 12 feet by 6. To this I reply, None whatever. The open part is partly paved, and partly covered with gravel, drift-sand, and mortar rubbish; and they have a dust bath, about 18 inches square, covered so as to prevent its becoming wet. I give them green food whenever I can obtain it.—S. G. J.

BRAHMA POOTRAS AT THE BRISTOL SHOW

In my "Dottings" at Bristol I endeavoured to give my own impressions without favour or personal bias one way or the other. Many may differ from those remarks, and every one has a right to his own opinion. I never meant to make remarks unkindly or unfairly, and I confess myself somewhat surprised at the tone of Mr. Wright's reply.

I do not consider that "I virtually questioned the decision." To the best of my recollection, and I write from recollection, I said that the chicken class generally of Dark Brahmas was inferior. The Judges, I think, agreed with me, for in a large class they gave no commendation beyond the prize pens. Then I said that Mr. Wright's pen was poorly feathered. This is just a matter of opinion—*I* consider the birds very decidedly so. Mr. Wright does not. Well, we simply differ in what we deem heavy feathering; but I think if any impartial person examined the feathering in this pen and that of Mr. Boyle's single Brahma cock he would consider Mr. Wright's birds poorly feathered; at any rate, I must adhere to my own idea about them. As regards Mr. Boyle's second-prize pen, the breasts of the pullets certainly did not match.

Mr. Wright then praises Messrs. Hewitt and Douglas as "eminent judges." In this I perfectly coincide with him, and I am quite willing to abide by their opinion of the moderate vulture hock, as evidenced by their decisions in the Cochin classes. I have stated in my "Dottings" that Mr. Cattell's Cochin cock was too much so, even to please me! Whether my adherence to moderate vulture hock has "nearly ruined my own yard and some others crossed from it," I cannot say. My chickens of 1866 were not often exhibited, but in every case where they were shown as chickens they obtained notice. This does not look like "ruin" to my own yard; and as regards "others crossed from it," I happened to see the yards of one person last year who, two or three years back, crossed extensively from my yard. I admired his pullets exceedingly, and I have heard Mr. Wright say how much he admired them. The gentleman's reply to my admiration was to the effect that he owed it to me. So much for the ruin of other yards!

Lastly, Mr. Wright says, "'Y. B. A. Z.' had made several entries, and it was a subject of general inquiry why he did not send his birds." Surely the anxiety on this point was jocular. Mr. Wright knows quite enough of Brahmas to be convinced that no "perfect pen" was likely to be exhibited at the price (£2), at which my pens were entered in the old and chicken classes, and if he and others really wish to know why I did not send them, I reply, I had sold the cockerel from one pen, and one of the hens from the other. His last paragraph on my pens runs thus —"A single cock he did send, but the bird had the misfortune to remain unnoticed." Well, I am free to confess that I considered this unnoticed bird deserved the second prize, and I will go further and say that I would not exchange him for any other bird in the class save the first-prize bird. I am so tied to work that I have not the opportunities Mr. Wright enjoys of seeing other birds and comparing mine with them. During 1866 I never attended a single show, and I willingly allow that this poudering over one's own stock alone is disadvantageous; but this is my misfortune, not my fault. Had I seen my single cock bird in a pen before, he would not have been sent to Bristol. He does not show himself off, and is cowed—in fact, he is frightened; under such circumstances no bird can look well, yet he was certainly the shortest-legged bird in the class, and of very good colour. Mr. Wright does not add of this "unnoticed" bird, that when he saw him in my yard a few weeks before he admired him exceedingly, and would willingly have purchased him if I had been so disposed, in spite of the "ruin" that my stock seems to produce. I must also add that, as I understood Mr. Wright, he paid me the compliment of saying that he preferred my cocks to those of Mr. Boyle, and that he should like to breed from Mr. Boyle's pulleta and the identical "unnoticed" Bristol bird!—Y. B. A. Z.

WALSALL POULTRY AND PIGEON EXHIBITION.

It is but rarely we have to record such an extraordinary amount of success as that which attended the second Show held under the auspices of the local Committee of Walsall, on the 26th, 28th, and 29th inst. Nothing has been omitted that possibly could be done to secure success to the undertaking, and the whole of the Committee have worked together most harmoniously. Where such is the case success is almost certain, more especially, as in the case of Walsall, when everything is carried out fairly, openly, and aboveboard. There are committees, though few, to whom the experience of the Walsall management might prove a benefit, for they not only candidly acknowledged on the printed catalogues who were the Patrons, &c., of the Exhibition, but also the names of the Committee themselves; and to this, no doubt, could easily be traced public confidence as regards the individuals responsible for the payment of the very liberal prizes offered. In this case, however, where all was so fairly laid open to the inspection of the public, but little hesitation could exist, for the Committee determined to carry out to the very letter the arrangements as organised. The whole of the prizes were paid on the spot to any party identified at the Show as a winner, and the remainder of the prize money was sent to absentees through the Secretary of the Show as soon as possible. The cups were of sterling silver—could not some few committees take warning from the last two words?—and these were reserved for public inspection until the close of the Show, to be then at once remitted to the successful persons who through so severe a competition had merited and secured them. They cost the Committee every farthing nett cash of the wholesale price affixed to them; and we may with confidence add, many times have we seen cups of reputedly some two or three sovereigns' additional value given as prizes, of but little if any better than one-half the value of the Walsall cups, whether considered as to their intrinsic or artistic worth. We have only to add our earnest hope that for very many years the successful may enjoy the use of these most ornamental appendages to their social boards; and that even when they themselves are numbered among the past, these cups may still remain evidences of the energy and the success of the winners.

A short remark or two may here be made as to the principle carried out in respect to the catalogues and prize lists of the Walsall Show:—The names of all parties responsible either for the payment of the prizes or the appointment of them were made known. The result was, that at a second show only, 836 pens were brought together, representing almost every principal breeder's yard, not only in our own country, but even in the Sister Isle. It is evident, therefore, that openness and straightforwardness of conduct in poultry shows secures public confidence, whilst the contrary invariably causes distrust and dissatisfaction.

From the absence of the birds of several of our principal Dorking breeders, owing to the injury done to the health of their respective yards by the late severe weather, the *Dorkings* were not so good as might be supposed from the entries, as frost-bitten birds were general. Still, although we regretted to find many first-rate pens, though entered here, could not be sent, the class was generally good. The *Spanish* were first-rate, and an entry of forty-three pens in this class, with only a pen or two not present, proves winning in this branch was not an easy matter. The pens of every principal breeder were present, and the deteriorated condition of not a few pens was attributable exclusively to over-frequent exhibition, a feature now likely to be withdrawn on account of the nearly-closed exhibition season. This is so far well, as birds brought down to a very low standard by excessive exhibition in the first months of the year, rarely breed well during the subsequent season. *Cochins* were first-rate, and, perhaps, there was not a single pen in the whole Exhibition more deserving of special distinction than the winning Partridge-coloured ones. The hen in this pen was certainly fairly worth a journey of many miles to look upon, being perfection. Buff Cochins were all good; those constituting the second-prize pen were, as stated by the Judge, decidedly the best in the class but for the severely frost-bitten comb of the cock. From inquiry we find the owner, who as an old exhibitor we have hitherto given credit for being more experienced in such casualties, placed, after washing for the Walsall Show, the old cock near the fire to dry, with strict directions "to see that he did not become overheated." His subordinate, promising strict obedience, first took possession of the post of trust, lighted his pipe immediately after his employer's back was turned, and at length woke up to find to his own annoyance the cock's comb blistered from the sudden application of heat, and his master angry at such a neglect of duty. We may here mention, as our own anxious desire is to forewarn all other exhibitors, that in all cases of frost-bite, snow, snow water, or the coldest pump water, is the best application to restore vitality. Fire-warmth is the most dangerous of all applications, and should not in any case be resorted to. *Brahmas*

were very good, Mr. Boyle, of Dublin, being the cup-winner. Mr. Fletcher, of Manchester, took both first and second prizes in all the *Game* classes, with birds most unexceptionable in carriage, colour, and last, though not least, condition. *Hamburghs* were capital. In these classes, as in many other varieties, two hens were occasionally sent instead of one, as stipulated by the Walsall prize schedule. It really appears as though some of our readers pay little attention to the requirements of each particular show, though we have mentioned so particularly and so often that non-compliance with these is a fatal objection. The proper number of hens, one or more, must be sent; a hen too few, or one too many, is a "disqualification." The *Bantams*, *Turkeys*, the Fancy varieties of *Ducks*, and the Selling classes were uniformly excellent. The attendance of visitors was very good.

Dorkings (Any colour).—First and Fourth, T. Tatham, Kingsthorpe, Northampton. Second, J. D. Hewson, M.D., Stafford. Third, Hon. Mrs. D. Pennant, Penrhyn Castle, Bangor. Highly Commended, Mrs. Arkwright, Derby; J. K. Fowler, Aylesbury. Commended, H. Savile, Rufford Abbey, Nottinghamshire.

Spanish.—First, H. Lane, Bristol. Second, A. Heath, Calne. Third, J. R. Rodbard, Aldwick Court, Wrington, Bristol. Fourth, Messrs. Burch and Boulter, Sheffield. Highly Commended, E. T. Holden, Walsall; A. O. Worthington, Burton-on-Trent; J. Walker, Wolverhampton; J. R. Rodbard; N. Cook, Chowbent, Manchester; J. Hildick, Walsall. Commended, A. O. Worthington; E. T. Holden; G. Lamb, Compton, Wolverhampton; A. Heath; Hon Miss D. Pennant; J. Walker; J. Clews, Walsall; J. Thresh, Bradford.

Cochin-China (Partridge).—First and Second, J. Stephens, Walsall. Third, T. Stretch, Ormskirk. Highly Commended, A. Fenton, Rochdale; E. Tudman, Ash Grove, Whitchurch. Commended, J. Stephens.

Cochin-China (Buff or Cinnamon).—First, R. White, Sheffield. Second, H. Tomlinson, Balsall Heath Road, Birmingham. Third, H. Mapplebeck, Woodfield, Moseley, Birmingham. Fourth, W. Bayliss, Walsall. Highly Commended, W. A. Taylor, Manchester; Hon. Miss D. Pennant; H. Mapplebeck; D. Cunningham, Statfold Hall Farm, Tamworth; A. Fenton. Commended, H. Warner, Loughborough.

Cochin-China (White).—First, Capt. D. Lane, Great Barr Hall, near Walsall. Second, F. W. Zurhorst, Donnybrook, Dublin. Third, A. O. Worthington. Commended, Rev. W. J. Mellor, Colwick Rectory, near Nottingham; E. C. Boville, Willington, Burton-on-Trent.

Brahmas.—First, R. W. Boyle, Bray, Co. Wicklow, Ireland. Second, Col. Stuart Wortley, Grove End Road, London. Third, H. Lacy, Hebden Bridge. Highly Commended, J. Stephens; J. H. Cuff, Metropolitan Cattle Market; G. H. Roberts, Preston; H. Lacy; H. M. Maynard, Ryde, I.W.; J. H. Hinton, Hinton, near Bath. Commended, Rev. W. J. Mellor, Nottingham.

Game (Black-breasted and other Reds).—First and Second, J. Fletcher, Stonecclough, near Manchester. Third, C. W. Brierley, Middleton, near Manchester. Commended, S. Matthews, Stowmarket; W. Wainwright, Stretton-under-Fosse; J. Tyler, Loughborough; C. Minors, Sudbury; S. Dnpe, Evercreech.

Game (Any other colour).—First and Second, J. Fletcher (Duckwings and Piles). Third, S. Matthew. Highly Commended, J. H. Williams, Springbank, Welshpool (Duckwings). Commended, A. K. Briggs, Rawden; T. Robson, Penkridge.

Hamburghs (Golden-pencilled).—First and Second, T. Wrigley, jun., Tonge, Middleton. Third, F. Pittis, jun., Newport, I.W. Highly Commended, F. D. Mort, Stafford; F. Pittis, jun. Commended, W. Meanley, Birmingham; T. Amphlet, Walsall; A. K. Briggs; T. Walker, jun., Denton.

Hamburghs (Silver-pencilled).—First and Second, H. Pickles, Earby, near Skipton. Third, T. Sharples, Rawtenstall. Highly Commended, J. Preston, Allerton.

Hamburghs (Golden-spangled).—First and Third, J. Ogden, Hollinwood, Manchester. Second, T. Walker, jun. Highly Commended, A. K. Wood, Castle Donnington; I. Davies, Harborne; Messrs. S. & R. Ashton, Mottram, near Manchester; T. Fletcher; C. W. Brierley. Commended, H. E. Emberlin; W. Beetlestone, Walsall.

Hamburghs (Silver-spangled).—First, A. K. Wood. Second, J. Fielding, Newchurch, near Manchester. Third, T. Fletcher. Highly Commended, J. M. Kilvert, Ludlow; W. Horton, Albrighton; J. A. Taylor, Manchester; J. Fielding; Hon. H. W. Fitzwilliam, Wentworth-Woodhouse; A. L. Aspinall, Taynton, near Gloucester; J. Jackson, Bury, Lancashire.

Game Bantams (Black-breasted and other Reds).—First, H. Shumach, onthwell. Second, J. W. Morris, Rochdale. Third, F. Pittis, jun. Highly Commended, Master G. Crosland, Wakefield; A. Cottam, Easthorpe; C. W. Brierley; A. Fenton.

Game Bantams (Any other colour).—First and Second, F. Pittis, jun. (Duckwings). Third, H. Shumach (Duckwings). Highly Commended, Master G. Crosland (Duckwings).

Bantams (Gold and Silver-laced).—First and Second, M. Leno, Markyate Street, near Dunstable. Highly Commended, T. C. Harrison, Hull.

Bantams (Any other variety).—Cup and First, W. J. Cope, Barnsley (Pekin). Second, H. C. Woodcock, Leicester (White Japanese). Third, E. Cambridge, Bristol (Black). Highly Commended, S. S. Mossop, Long Sutton (Cochin); H. Draycott, Humberstone. Commended, T. Boucher, Birmingham (Japanese); J. R. Jessop, Hull (Black); H. C. Woodcock (Japanese); T. Gameson, Walsall (Cuckoo).

Any Variety not Named.—First, S. A. Wylie, East Moulsey (La Flèche). Second, J. Percivall, Harborne, near Birmingham (Poland). Third, National Poultry Company, Bromley, Kent (Gueldres). Fourth, T. Fletcher (Black Hamburgh). Highly Commended, M. York, Pelsall (Manx); Col Stuart Wortley (Crève Cœur); National Poultry Company (Crève Cœur). Commended, National Company (La Flèche); Col. Stuart Wortley (Crève Cœur); Miss M. E. Lamb (Negroes); R. H. Nicholas, Malpas, near Newport (Andalusians).

Ducks (Aylesbury).—First, H. Jones, Aylesbury. Second, J. K. Fowler, Aylesbury. Third, E. Leech, Rochdale. Highly Commended, H. Jones.

Ducks (Any other variety).—First, T. C. Harrison (Mandarins). Second, C. W. Brierley (Shell). Third, H. Savile (Carolinas). Highly Commended, Miss H. Walker, North Wales (Rouen). Commended, J. E. Bealey, Bloxwick (Wild); A. Fenton; Capt. D. Lane (White).

Geese.—First and Second, J. Lycett, Stafford. Third, J. K. Fowler. Highly Commended, A. O. Worthington; H. Savile; Hon. H. W. Fitzwilliam.

Turkeys.—First, E. Leech. Second, D. Cunninghame. Third, F. E. Richardson Uttoxeter. Highly Commended, A. O. Worthington. Commended, F. E. Richardson.

Selling Class.—First, T. Tatham (Dorkings). Second, Hon. Miss D. Penuent, Penrhyn Castle, Bangor (Brahmas). Extra Second, S. & R. Ashton. Third, National Poultry Company (Crève Cœurs). Extra Third, J. M. Kilvert (Hamburghs). Fourth, J. Preston. Extra Fourth, C. W. Brierley. Highly Commended, Mrs. Williamson, Leicester Cochins); H. & S. Cooper, Walsall (Spanish); H. E. Emberlin, Leicester (Bantams; G. H. Roberts (Brahmas); T. Amphlet (Spanish); H. Savile (Polands); C. Barber, Walsall (Spanish); F. W. Earle, Edenhurst (Ducks); J. Wright, Melton Mowbray (Hamburghs); J. D. Hewson (Dorkings); M. Brooksbank, Manchester (Brahmas). Commended, J. H. Williams (Game); R. H. Nicholas (Hamburghs); H. E. Emberlin (Hamburghs); W. Bayliss (Cochins).

PIGEONS.

Carriers.—*Cock.*—First, R. Fulton, Deptford. Second, W. Siddons and Sons, Birmingham. Very Highly Commended, F. Crossley, Elland, Yorkshire. Commended, S. A. Taylor, Sutton Coldfield; H. Yardley. *Hen.*—First and Second, F. Crossley. Very Highly Commended, R. Fulton; W. Siddons & Sons. Highly Commended, W. Siddons & Sons.

Powters.—*Cock.*—First, F. Crossley. Second, J. Hawley, Bingley. Very Highly Commended, A. Heath, Calne, Wiltshire; C. Bulpin, Bridgewater; A. H. Stewart, Harborne, near Birmingham; J. E. Breward, Coventry; R. Dodge, Sheffield. Commended, R. Fulton. *Hen.*—First, A. H. Stewart. Second, A. Heath. Very Highly Commended, J. Hawley. Highly Commended, R. Fulton. Commended, J. Hawley.

Tumblers (Almond).—First, J. Ford, Monkwell Street, London. Second, R. Fulton.

Tumblers (Any other variety).—First, R. Fulton. Second, F. Crossley. Very Highly Commended, C. Bulpin. Commended, J. Fielding, jun.

Jacobins.—First and Second, R. Fulton. Highly Commended, F. Else, Bayswater. Commendad, C. Bulpin.

Fantails.—First, F. Else. Second, H. Yardley. Very Highly Commended, H. E. Emberlin. Highly Commended, R. Dodge.

Antwerps.—First, S. A. Taylor. Second, Master G. Crosland. Highly Commended, J. Hawley; S. A. Taylor. Commended, J. Hawley.

Trumpeters.—First, J. R. Jessop. Second, J. Hawley. Commended, W. H. C. Oates, Newark; Rev. W. J. Mellor.

Owls.—First, F. Crossley. Second, J. Fielding, jun. Very Highly Commended, F. Crossley. Commended, J. Fielding, jun.

Barbs — First and Second, F. Crossley. Highly Commended, H. Yardley. Commended, H. Yardley; J. Fielding, jun.

Nuns.—First and Second, C. Bulpin. Commended, F. Else.

Turbits.—First, R. Siddall, Sheffield. Second, H. Mapplebeck. Very Highly Commended, H. Yardley. Highly Commended, C. Bulpin; F. Crossley.

Dragons.—First, F. Crossley. Second, J. W. Ludlow, Birmingham. Highly Commended, J. W. Ludlow. Commended, H. Yardley; C. Bulpin.

Any other Variety.—First, H. Yardley, Birmingham. Second, National Poultry Company (Priests). Very Highly Commended, S. A. Wyllie (Runts). Highly Commended, H. Yardley. Commended, National Poultry Company (Runts); A. H. Stewart (Siberian Ice); H. Yardley; J. Hawley (Swiss); F. Crossley (Swallows); C. Bulpin.

Selling Class.—First, H. Yardley. Second, A. H. Stewart (Jacobins). Third, J. Walker, Newark. Highly Commended, J. Percivall (Isabels). Commended, R. Dodge (Powters); J. Hawley; H. Yardley.

Silver Cup for the best collection of Pigeons, F. Crossley.

Mr. Edward Hewitt, of Birmingham, judged the first twelve classes of Poultry, Mr. Tegetmeier, of London, the remaining Poultry classes, and Mr. Cottle, of Cheltenham, the Pigeons.

PERTH POULTRY SHOW.

This was held in the City Hall, Perth, on the 24th and 25th inst. The following are the names of the prizetakers:—

Spanish.—First, J. Kerr, New Scone. Second, W. Paterson, Langholm. Third, A. Ridpath, Edinburgh. Highly Commended, W. Bruce, St. Leonard's Bank.

Dorkings.—First, G. Muirhead, Durdie. Second, J. Anderson, Meigle. Third, A. Macfarlane. Highly Commended, G. Brand, Bathgate.

Game.—First and Second, J. Anderson. Third, W. Donaldson, New Scone. Highly Commended, D. Gellatly, Meigle; J. J. Wilson, Darlington. Commended, J. M'Gregor, Crieff.

Cochins.—First, J. Meff, Aberdeen. Second, Mrs. Oswald, Dunnikier. Third, C. Pease, Darlington.

Brahmas.—First, K. Jopp, Aberdeen. Second and Third, Mrs. White, Castle Huntly. Highly Commended, J. Rutherford, Fife.

Hamburghs (Pencilled).—First, W. R. Parks, Melrose. Second, R. Macgregor. Third, G. Walker, Selkirk. Highly Commended, Mrs. Brown, Abercairny.

Hamburghs (Spangled).—First, H. Corrie, Ardrossan. Second, W. France, Crieff. Third, Mrs. Brown.

Bantams (Game).—First and Second, J. Anderson. Third, R. Macgregor. Highly Commended, F. L. Roy, Nenthorn. Commended, A. Robertson, Burntisland.

Bantams (Any variety).—First, F. L. Roy, jun. Second, J. R. Jessop, Hull. Third, Master W. H. Pople, British Hotel.

Ducks (Rouen).—First, J. Hardie, Sorbie Ewes. Second, J. Anderson. Third, Mrs. D. Cochrane, Lundie Mills.

Ducks (Any variety).—First, A. Huggart, Fife. Second, J. R. Jessop, Hull. Third, J. Hardie. Highly Commended, W. Paterson.

Any Other Variety.—First, Mrs. White. Second, J. Allan. Third, W. R. Parks, Melrose.

Selling Class.—First, D. Gellatly. Second, A. Ridpath. Third, J. Allan. Highly Commended, J. S. Smith, Inchbrakie; T. Baines, Bridge Haugh; A. Macgregor.

Sweepstakes for Single Cocks.—*Spanish.*—First, A. Ridpath. Second, W. Bruce, St. Leonard's Bank. *Dorking.*—First, J. Anderson. Second, J. Allan. *Game.*—First, J. Anderson. Second, J. Laing, Glendeughie. *Bantam.*—First, R. Macgregor. Second, F. L. Roy, jun.

VENTILATING INCUBATORS.

"E. S.'s" letter in your Number of the 8th of January shows, as he says, that he has devoted much attention and observation to the subject of incubation. Damp atmosphere, temperature as steady as possible at 103°, every attention to be paid to the effect of external temperature, and constant ventilation, are, as he writes, the main points, and they are those that I have kept steadily in view in the construction of my patent incubator, and which are contained in my "Directions."

I am glad to find that some one else besides myself is impressed with the necessity of constant ventilation—a point that I believe has been lost sight of, and is not provided for by any other incubator but mine.—Fred. H. Schroder, *Rickmansworth.*

SWARMS CLUSTERING OUTSIDE THEIR OWN HIVE.

VARIATION IN THE COLOUR OF HYBRIDS.

I have before remarked on bees swarming or clustering with their queen outside the hive when young queens were being brought forward, and that such swarming or clustering very often took place at night. A case of this kind happened with me this year, which I will relate, as the result corroborates the statement of Mr. Fox, of Kingsbridge, relative to two queens being in a hive at one time.

On the 22nd of July at 8 P.M. I noticed the bees of a hive lying out very much. It had been a warm day, but no honey was gathered. I was somewhat surprised at such numbers lying out, but on account of the heat I paid no heed to it further than getting them into their hive again. Next day I deprived another hive of its queen, and exchanged their combs, transferring them from one to the other for the purpose of raising queens. I suspected nothing until about three weeks afterwards, when I noticed a good many young black bees in the hive which had pure Ligurian combs, giving evidence of the existence of a young queen which had been hybridised, and showing plainly enough that two fertile queens had existed at one and the same time, as a subsequent examination proved by discovering the old queen still alive, the young one having evidently been thrown out. This case shows how careful we ought to be in raising queens from hives in respect to which any doubt may exist as to their having the original queen.

I am not sure but that a similar occurrence has taken place more than once this season, as in the case of several queens which were raised from a pure stock their progeny showed very little of their Italian origin. In a number of crosses which have occurred between the Italian and black bees there is much variation; in one case in which a black queen has been crossed there is not more than one marked bee in the hundred, while others show about one-half.

I may here mention that my views in regard to hybridisation are in accordance with those of Mr. G. B. Fox, and in opposition to those of Mr. F. H. West.—A Lanarkshire Bee-keeper.

[May not this apparently anomalous variation in the colour of the progeny of hybridised queens be accounted for by the fact that a queen bee does not always restrict herself to one drone?]

TO HIVE BEES IN A MOVEABLE COMB HIVE.

There is more difficulty attending this than with box hives, yet it is easily accomplished. Some think it best done by spreading a sheet as smoothly as possible in front of the entrance, upon which the bees are shaken close to the entrance, when generally with fanning wings they will accept their new home. If they do not go in rapidly enough, with a goosequill brush them gently in, or with a spoon direct their motions toward their new abode. Bees once shaken in the swarming season on a sheet are not apt to take wing again, since they are loaded with honey, for in that state they invariably leave the old colony.

There is another plan that we prefer—remove the honey-board*, and separate from the centre of the hive three or four of the frames, by sliding them to either side, and then in this opening shake the bees either from the bush or basket, slide the frames back to their places, replace the honey-board by sliding it on from one end of the hive, so as to avoid crushing the bees, and the operation is finished. The few that may return to the bush or adhere to the hiving basket, may be shaken in front of the hive entrance, and will quickly go in. When quiet, remove to permanent stand without delay.—(*American Bee Gazette.*)

* *Anglice*, Crown-board.

BREEDING IN SUPERS.

In the second column of page 80 in your last issue reference is made to "narrow slits one-fifth of an inch wide." I may here state that I have always been in favour of the collateral system, and for thirty years I have worked with much success Pettitt's collateral hives. The crown-boards of the stock hives are pierced with narrow slits three-sixteenths of an inch wide, or rather smaller than one-fifth. I have worked with these hives four glasses upon the top when the bees have been working in the collateral super, so that they have actually been working in five compartments or hives at one and the same time. The subterraneous communication between the stock hive and the collateral super has also been provided with a "grating" cut in wood, and I do not believe either of these supers was ever favoured with a visit either of the queen or drone bee. I have taken away the collateral super containing nearly 50 lbs. of the purest virgin honeycomb, without the slightest evidence of a visit from either the queen or a drone. I believe one great advantage in Pettitt's arrangement is that the communication from one hive to the other is in the floor-board, and the ventilating properties of this hive are such that the temperature of either box can be so regulated as not to interfere with that of the other. These narrow slits must be cut in the wood. Both wirework and metal castings I have tried, but without success.—Sunbury.

STARVATION IN THE MIDST OF PLENTY.

The late protracted frost broke up to-day (January 23), and the inhabitants of my twenty-two Ligurian stocks, with one exception, lost no time in availing themselves of the favourable opportunity for exercise in the open air, disposing of their dead, &c. An examination of the exceptionally quiescent stock proved that its unfortunate inhabitants had literally succumbed to famine in the midst of plenty; having exhausted what honey was stored in the central combs the severe cold prevented their obtaining access to those at the side, and in this way they were starved to death with both sealed and unsealed food within their domicile. This starvation in the midst of plenty is so frequent in America that bee-keepers are in the habit of guarding against it by boring a hole about an inch in diameter through all the combs from one side of the hive to the other, so as to permit the bees to obtain access to every comb without passing round their edges, but this is the first instance in which a catastrophe of the kind has come under the direct observation of—A Devonshire Bee-keeper

OUR LETTER BOX.

Husking Buckwheat.—*Inquirer* wishes to be informed how to separate the husk from buckwheat.

Salt for Fowls (*E. S.*).—Salt is said to be injurious to poultry. We never knew a fowl constipated, except in cases of inflamed bowels.

Mistake in Catalogue (*W. Bradley*).—As the bird was in its right place before the Judges went round to determine their awards, you could not have been injured; consequently you have no justification for suing the Committee.

Abscess in Fowl's Lungs (*A. F. Newman*).—No treatment could have saved your Brahma Pootra cock. The fungus-like substance which you enclosed was the discharge from an abscess in the lungs. The cause of the diseased lungs was possibly exposure to the severe weather. Your other Brahma Pootra which has "entirely lost the use of his legs," if that be literally true, had better be killed. Before doing so try what effect bread soaked in ale, and two grains of sulphate of iron daily, will have.

Dandelion Leaves for Fowls (*E. S.*).—The leaves of dandelion boiled and mixed up with barley meal may form an excellent food for fowls, but we never knew them used, nor do we know whether fowls would relish such bitter diet.

Washing Poultry (*W. G.*).—White Cochin China fowls may have their feathers washed with soap and water. After washing keep them until dry in a large hamper or an enclosure, the floor of which is quite covered with clean straw.

Rabbits (*Idem*).—"The Rabbit Book" will suit you. You can have it free by post from our office if you enclose seven postage stamps with your direction.

Ligurian Bee (*A North Staffordshire Bee-keeper*).—The bee is a distinctly marked Ligurian. We have no doubt that your explanation that the queen of your hive had met with drones from a Ligurian hive five miles distant is correct.

Ligurian Queens (*A Lanarkshire Bee-keeper*).—One guinea is the usual price for a warranted queen of this variety.

WEEKLY CALENDAR.

Day of Month	Day of Week	FEBRUARY 7—13, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
7	Th	Brachysema latifolium.	46.5	32.7	39.6	21	32 af 7	57 af 4	33 af 8	20 af 8	3	14 24	38
8	F	Brachysema undulatum.	45.2	32.0	38.6	20	30 7	59 4	0 9	31 9	4	14 27	39
9	S	Boronia pinnata.	44.9	31.1	38.0	15	28 7	0 5	28 9	42 10	5	14 29	40
10	Sun	5 Sunday after Epiphany.	44.3	29.4	36.9	14	26 7	3 5	57 9	55 11	6	14 30	41
11	M	Correa speciosa.	44.1	29.5	36.8	17	25 7	5 5	29 10	morn.	7	14 31	42
12	Tu	Primula sinensis.	44.6	29.5	37.1	16	23 7	6 5	7 11	8 1	☽	14 30	43
13	W	Magnolia conspicua.	44.0	29.5	36.7	14	21 7	8 5	52 11	18 2	9	14 29	44

From observations taken near London during the last forty years, the average day temperature of the week is 44.8°; and its night temperature 30.5°. The greatest heat was 65°, on the 10th, 1831; and the lowest cold 0°, on the 13th, 1855. The greatest fall of rain was 0.67 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

A GOSSIP ABOUT POTATOES.

I HAVE lately been reading through my papers on the Potato, previously published in these pages—how rapidly the years seem to have passed away!—and the reperusal has impressed on me the need of caution, and never to become too determined and certain upon any one point or principle of cultivation, or to fancy that one has drawn a line beyond which further progress is not possible, and, above all, not to take too much conceit to oneself about that last new offspring of thought, for very likely it may turn out to be only new because it has been forgotten.

I find by my writings that I have been careful in these respects; but I am a reader of old books upon a variety of subjects, and it is astonishing how often I find the very ideas and doings that I could conscientiously have laid claim to as the independent workings of my own brain. Fine lessons these old-world recurrences afford; they serve to take down conceit, by showing that there have been and always will be others as good and clever as oneself; and that the best plan for a man who wishes to make himself useful in his day is first to prove his theories by practice, and then to publish the results

This must be my excuse for not addressing you lately. Dame Nature for my practical hobbies insists upon time, and ready writers are so very quick that if one did not "fruit first and write afterwards," the task of defending oneself would not be altogether so very easy; besides, in the midst of tighting one cannot write, and about fourteen months ago a challenge was thrown down to me, when referring a querist to some printed correspondence of mine, "Oh, ah!" said my questioner, "it's all very well for you scribbling fellows to write this and that, ten to one it is all theory. Give me one practical man before you all. Why do you not show, and go in and win with the fine productions brought about by the practice you describe? then one could feel that it was not all bosh!" Pleasant to hear, certainly, and this writer felt himself "scratched;" so, in defence of the "scribbling fellows," and to encourage the others, I did "go in," and I did "win" in less than a year two medals, twenty-three first-class certificates, one extra prize, and two high commendations at the Royal Horticultural Society's Shows at South Kensington. Perhaps he will cry, "Braggadoccio!" And so it is; and why should I not be proud of being so commended? I am; and now to my "Gossip."

Cultivators' minds are now opening to the subject, and after perusing the papers of recent writers about the Potato, I wish to show how my practice and opinions respecting this esculent may agree or clash with theirs, and to let you know how its cultivation has fared with me during the last untoward season.

My frame and orchard-house were too much crammed with other occupants last season for me to attempt the production of early Potatoes there, and such is the case at present; so I adopted, and intend to adopt for the future, the excellent plan stated by your spirited and untiring correspondent "Forwards," at page 22, No. 198, Vol. VIII. On March 23rd I planted Webb's Telegraph, Coldstream Early, Shutford Seedling, and Mitchell's Early Albion, with an eye to exhibiting those kinds at the International Horticultural Exhibition in May, but to find that I had placed too much faith in the good qualities attributed to Webb's Telegraph. Coldstream Early took the lead of Shutford Seedling and Mitchell's Albion; it came into use the soonest by ten days, and by May 18th I had fine samples of the last three sorts. Webb's Telegraph, however, was fully three weeks behind the rest. I felt sadly disappointed, and it caused me not to exhibit new Potatoes, as I had determined to show a set of four early varieties. Coldstream Early is now placed first upon my books, it having beaten my previously crack sorts, Mitchell's Albion and Shutford Seedling. I saw, also, that Mr. R. Budd, gardener to the Earl of Darnley, was within very little of taking a first prize with it at the Great Show.

However, some varieties of Potatoes I have had in cultivation for years, others for a few seasons on trial only, but these I have, nevertheless, proved on different kinds of soil, and a few sorts are quite new to me, having been only one year on trial. I do not think we are justified in condemning a variety of Potato until we have proved it for two or three years on different descriptions of land. If it continues to prove a bad flavourless sort on soils varying from heavy to light, then we may fairly speak badly of it. It is a great satisfaction for me to find that to many of the sorts I have tried, and which I have recommended in these pages, excellent characters are given by those who have cultivated them in soils entirely different in texture from that of this garden, where I grow them very good. It consists of a stiff, stony loam, about 30 inches deep, resting upon a subsoil of clay that holds water like a basin, and it is much shaded by trees. I was formerly much puzzled to grow a Potato fit to be eaten, and, in fact, I never could induce a coarse-foliaged kind to yield me a crop at all. It was all tops and no bottoms till sixteen years ago, when I first began to feel my way on the ridge-and-trench plan with a coarse-topped kind called Cornish Kidney, and my man at that time—poor John Brotherton—reported in the neighbourhood that I was "going to grow Potatoes upon raised banks sufficient to form a Roman encampment!" but he was an old soldier, and, I fear, sometimes shot with a rather long bow.

Whilst writing this paper I have received a letter from a gentleman, a perfect stranger to me, but a great connoisseur of Potatoes, who lives near Bar Point, on the coast of Devon. The letter comes in so appropriately in respect to what I have stated above that I will quote an extract here. "The Yorkshire Hero I was getting forward, so the germs are set, yet I will pack it most carefully for you; the North

Riding Beauty (round, a late keeper), is not much sprouted; and of Thomas Almond's first early (the first year public, still almost unknown), I have put by for you some of the least sprouted I could find." I have had a great hankering after those kinds ever since Mr. Rudelyffe first informed us about them in Vol. X., page 165, No. 257. The extract concludes, "I have also a Potato which I value—Daintree's Seedling Kidney. I had it early last year direct from Fen Drayton. I think it is superior to the Lapstone, which is very good with us, but soil effects such wonders for good or evil; yet name it, and I will send you a sample." Now, the soil about Putsborough must be quite different from this at Woodstock, and I believe I received the very first tuber of his Kidney seedling that Mr. Daintree ever sent out. It was sent in a letter through the post-office, and was much damaged by the post-office stamping. I kept Mr. Daintree three years in suspense before I could quite decide upon its merits, but I am happy to say he lived to know that I grew it successively upon three different soils, and then I felt a pleasure in recommending it as being a Potato of the same strain as the Lapstone, and even superior to that very excellent variety. From what "D., *Deal*," said about it (No. 9 in his list, Vol. XI., page 463, No. 299), I expect it will also rank well with so good a judge, and in a soil different from that of my Devonshire correspondent.

Allow me here to state that I quite agree with Mr. McDonald, of Woodstock Park, Inistioge, in what he says about another *protégé* of mine, Coldstream Early, at page 464 of the same Number of The Journal of Horticulture. It is this sort of cross-examination upon different soils that we want before new kinds of Potatoes are sent out by the raisers. My object is to prove what are the best sorts which can be obtained for the rector's table, and the supply of our household. I have been four years proving my Onwards seedling to my satisfaction on different soils, and I am now sending it to experienced growers upon various soils, requesting them, in the event of the kind not proving entirely to their satisfaction, to be good enough to destroy every tuber, as I should feel sorry to offer a Potato to the public under my name, unless it were quite first-rate. Raisers of new sorts err in being in too great a hurry in sending out their seedlings. Including the present year I shall have been five years in making a trial of fifty sorts, dating from the seeds maturing in the berry, and although many of the issue turned out what for the first three years I thought very good varieties, yet I decided that they were not superior to sorts already in cultivation; so of such I took the precaution to boil into pulp in a copper whatever we did not consume, and with this pulp watered the Rose trees, and the result was, that we never had Roses in finer bloom.

I have now only three kinds left out of the fifty—namely, Russet Kidney, Beehive, and the Onwards, and I believe I shall have to consider the last only as worthy of perpetuation, perhaps not even that, if I do not succeed in obtaining good reports of it this year from a distance. My friend, Mr. Alexander Dean, of Maybush, near Southampton, is the only person at present besides myself who has made a trial of my seedling. He says, "Fenn's Onwards, a seedling of his own, a second early round, good both as to crop and quality." Mr. Dean exhibited sixty varieties of Potatoes at the Royal Horticultural Society's gardens, in September last. A notice of them appeared in the October number of the "Florist and Pomologist."

Although the labour of five years is only likely to produce me one Potato, I am now about sowing two more choice crosses, numbering about one hundred seeds, from which I hope to produce something superior, although I fear I shall not be able to arrive at the characteristic stated by my brother at a cricket-match dinner given last year. He complained of the badness of the kind served at table, and joking retorts from his cricketing friends arose as to "what he knew about Potatoes?" "Well," he said, "he certainly could tell whether a Potato was good or bad when eating it; but he had a brother living in Oxfordshire, who was a connoisseur of Potatoes, and could judge of them in their raw state; that he had just raised a new sort, as even and round as a cricket ball, and he was merely waiting before he let it out, to produce on each tuber an imitation of the seams."—Upwards and Onwards.

(To be continued.)

EDGING FOR WALKS.

In reply to your correspondent an "Ayrshire Gardener," I venture to give my experience with regard to a substitute for a Box-edging, having been in a similar dilemma. I have an oval bed in the middle of my garden, with an Apple tree in the centre, the bed filled with Lilies of the Valley. The Box-edging did not thrive owing to the drip from the tree, or being overgrown by the Lilies: consequently every two or three years it had to be replaced. After one of my visits to the Royal Horticultural Gardens I substituted an edging of Messrs. Rosher's cable-pattern terra-metallic tiles, of two sizes, the smaller to turn the oval more neatly. The tiles were laid in with only the cable pattern above the ground; the chinks, unavoidable in the turning, were filled in with Portland cement, and the whole painted a dull green, so as to resemble as nearly as possible the colour of the Box in the other parts of the garden. The result has been very satisfactory. I think this is the third winter, and I have not had to replace one tile. I was careful to have terra-metallic tiles.—F.R.H.S.

CHRYSANTHEMUMS NEW AND OLD.

Whatever may betide other florists' flowers, however the Pansy may be snubbed, the Dahlia sneered at, and the Auricula cold-shouldered, there is no fear of the Chrysanthemum being passed by. Even the bedder-out patronises it, for certainly one of the best beds that I saw at Battersea Park last season was composed of Mr. Bull's variegated sort Sensation; and as the Chrysanthemum, happily for its fame, comes into flower when the glories of the garden have faded away, and all looks dreary save where this plant has been allowed to linger; as, moreover, it is so easily propagated, and bears itself so bravely and so well amidst the smoke of our huge metropolis, it is likely to have a prolonged period of favour. Hence Mr. Salter, to whom we owe nearly all the fine varieties now in cultivation, need not be afraid of a time when his winter garden will be deserted, and the tide of visitors which finds its course there during the dreary month of November will be stopped in its course. Were it so, one of the chief pleasures of a visit to London in that month of fogs and dreariness would be lost. I see nothing in a Chrysanthemum show, but I do confess to a real enjoyment in a stroll through the well-arranged greenhouses in which Mr. Salter year by year places his favourite flowers. Such a stroll I had in November last, and the results of it I now chronicle; and inasmuch as the time for purchasing is now at hand, I may in some way be a guide to those who are seeking to add to their collections.

I must here, however, confess to a piece of heterodoxy—viz., that I think the incurved flowers have now reached pretty well their acme, and that in order to obtain brighter colours we must try the reflexed sorts, infusing, it may be, some of the blood of Mr. Fortune's last introductions from Japan. In one sense these incurved flowers are disappointing: the opening bud gives promise of bright colour, but by the time that the flower is fully opened the back of the florets is alone exposed to view, and, consequently, a good deal of the richness of the colouring is lost; but in the reflexed flower, which I think may with care be obtained as full as some of the varieties of reflexed Asters, the front of the florets is that which is exposed to view, and consequently a brighter-coloured flower is likely to be obtained. Mr. Salter mentioned to me that Mr. Fortune's Japanese varieties, which were at first neglected, are now being sought after; and this is probably a symptom of an alteration in taste which will effect the object I allude to.

As usual, Mr. Salter has a large number of varieties to be introduced to the public this spring. Some of these had not been named at the period of my visit, but of those which had I noticed Lady Talfourd, beautiful silvery rosy lilac, a fine incurved flower; Faust, a chestnut red; Countess of Warwick, fine creamy white; Madonna Mary, a large-petalled flower; Rosa Mutabilis, a delicate pencilled flower; Dr. Lindley, fine amber, a beautiful flower; Purpurea Elegans, quite new in colour, of a rosette form, and very good in all respects; Yolande, light blush white, silvery lilac back to petals; Gold of Ophir, not probably a show flower, but of good habit; Iris, a large incurved flower, bright orange, with purplish back.

Of the flowers of 1866 the following seem to me those most deserving of cultivation:—Amabilis, delicate blush, incurved; Compactum, an excellent conservatory flower, blooming early, and of admirable habit; Countess of Granville, fine white, a reflexed flower of great beauty; Crimson Velvet, beautiful velvety crimson, the darkest and brightest of all the high-coloured Chrysanthemums; Gloria Mundi, a splendid brilliant yellow, a seedling from Jardin des Plantes, and when I say

superior to that fine flower, I think it is enough to stamp its merit; Golden Beverley, a fine canary-coloured flower, a sport from that fine deep flower Beverley; Hereward, large, purple, with a silvery back to the florets, very compact; Isis, medium-sized, very double and compact; John Salter, reddish crimson, shaded with orange—I should be sorry to think that a flower so named as this was not first-rate, but I have misgivings as to its centre, with me it did not fill up so well as it ought, and I saw several blooms at Mr. Salter's in a similar condition; it is a fine flower if this defect is not general;—Josiah Wedgwood, rosy carmine, close and compact; Miss Eyre, blush late-flowering anemone, of medium size and dwarf habit; Mr. Gladstone, dark reddish chestnut, incurved; Sylvia, rosy lilac, with silvery back.

Of the Pompones of 1866 there were—Fairy Nymph, fine pure white, with round florets; Little Beauty, white, bordered with delicate rosy pink; Marie Stuart, lilac blush, with sulphur centre; Prince Victor, dark red maroon; Rose d'Amour, clear rose, very full and free; and Torfrida, bright golden amber.

Of older flowers in the large-flowered section I would recommend the following:—

*Aimée Ferrière, silvery white, beautifully tipped.
Alba Multiflora, white, incurved.
*Alfred Salter, delicate pink.
Annie Salter, golden yellow.
Attraction, blush, margined with pink.
*Bella Donna, delicate lilac, with light centre.
Bernard Palissy, fiery orange.
*Beverley, fine white.
Blanche of Castile, fine incurved, white.
Cardinal Wiseman, early-blooming, reddish crimson.
*Cleopatra, rosy blush.
Dr. Brock, reddish orange.
*Duchess of Wellington, delicate rose, tipped with blush.
Dupont de l'Eure, an old flower, a bad grower, but very fine.
Edith Dombrain, lilac blush, a beautiful conservatory plant.
*Eve, primrose sulphur.
General Bainbrigge, dark orange, amber and gold centre.
Golden Eagle, indian red and orange.
*Golden Queen of England, golden canary colour.
Golden Trilby, a sport from Trilby, clear yellow flowers.
Hercules, large red carmine.
*Her Majesty, silvery blush, compact habit.
Hermine, blush, tipped with purple.
Jane, silvery pink, a good close flower.
*Jardin des Plantes, splendid golden orange.
King of Denmark, rosy lilac.
*Julie Lagravère, a fine old dark variety.
Lady Carey, rosy lilac, silvery back.
Little Harry, bright golden amber.
Lord Palmerston, rosy amaranth, tipped with blush.
*Luther, large rosy crimson.
Marçeau, rose, bordered white.
Mr. Brunlees, large; indian red, golden tips.
*Mrs. E. Miles, bright yellow.
Mrs. Kelnes, blush.
Orange Perfection, dark salmon orange.
*Prince Alfred, splendid rosy crimson.
*Prince of Wales, dark purple violet.
*Princess of Wales, pearl white, delicately tinted rosy lilac.
Rev. J. Dix, orange red.
*Sam Slick, ruby, with bronze tips, something like Stafford's Gem Dahlia.
Sir Stafford Carey, dark brown chestnut.
*Sparkler, red, tipped with bright orange.
Triomphe du Nord, large, light red chestnut.
*Venus, large, lilac peach.
*Virgin Queen, pure snow white.

POMPONES.

*Andromeda, cream, with brown points.
Auréole, crimson and orange.
Aurore Boréale, yellow buff.
*Bijou de l'Horticulture, charming sulphur white.
Capella, dark red chestnut.
Citronella, pure clear yellow.
*Comte Achille Vigier, pale salmon mottled.
*Duruflet, rosy carmine, very fine.
Fairest of the Fair, lilac blush.
François 1re., reddish orange.
Golden Aurore, bright gold yellow.
*Julia Engelback, yellow and brown points.
La Vegue, bright gold.
*Lizzie Holmes, canary yellow, tinted with rose.
Lucinda, rosy lilac and blush.
*Madame Fould, cream, splendid shape.
*Marabout, white, fringed.
Mdlle. Marthe, very fine, dwarf, white
Minnie Warren, rosy blush, with yellowish centre
*Mrs. Dix, blush, bordered rose.
President Decaisne, rosy carmine.
Rose Trevenna, rosy blush.
*salamon, dark rosy carmine.
*Little Gem, delicate peach blush, late-blooming.
*Trophée, rose mottled, fine.
White Trevenna, a beautiful sport of Rose Trevenna.

ANEMONE-FLOWERED, LARGE AND SMALL.

*Fleur de Marie, fine white.
King of Anemones, large, crimson purple.
Lady Margaret, large, pure white.
*Marguerite de York, canary and dark yellow.
Prince of Anemones, large, lilac blush, and fine high centre.
*Queen Margaret, rosy lilac.
St. Margaret, bright orange.
Boule de Neige, white.
*Cedo Nulli, and its sports Golden and Silver Cedo Nulli.
Madame Montels, white, with yellow centre
*Madame Sentir, pure white.
Mr. Astie, bright golden yellow.
Reine des Anemones, white, very fine.

For those who might wish for a smaller number I have marked with an asterisk a more select collection of varieties, which are, I think, sure to give satisfaction, whether grown in pots or out of doors.

The past season was a peculiar one, many persons having sorely complained of their pot plants, while those in the open air blossomed more finely than I ever recollect, no frost having occurred to hurt the bloom until they had nearly if not quite completed their flowering.—D., *Deal*.

RUBBISH HEAPS.

Such is the title of a useful article by Mr. R. Fish at page 273 of the last Volume of your Journal. Mr. Fish states that he has two or three heaps, which he treats differently. He describes, indeed, four heaps, but he only treats the four in two different ways; the first two, consisting of weeds seeding (!), short grass from the lawns, &c., to pass through, if I correctly understand him, the process of fermentation, and the other two, consisting of tougher refuse matter, to be charred.

In regard to these heaps Mr. Fish justly states, "that much future labour would be avoided, as respects weeds, &c., were they always kept distinct by the workmen;" but "there's the rub." I should like to know the secret of his success, if he does succeed. My own efforts to produce good and clean leaf mould have been repeatedly baffled, from the difficulty of "insensing" (excuse the provincialism), the labourers with the necessary care to be observed in separating the vile from the refuse. Even the one whom I regard as head gardener or overseer I have found it hard to make an impression upon in this respect; he has sometimes smiled when I have been delivering my injunctions, evidently setting me down as "mighty too particklar." The consequence has been, that the beds and borders, which have been dressed with the mould from these heaps, have sometimes been covered again with the same stones which the year before had been carefully picked or raked off, or swept from the gravel walks; and, as the spring has advanced, plentiful crops of weeds, or of flowering plants, as bad as weeds when growing where not wanted, have started up in all directions. The negligence and indifference usually betrayed by this class of workmen arise chiefly from the want of careful training in their early years: therefore I prefer to put intelligent boys to work at weeding and separating the refuse, for I find them more docile and less prejudiced.

In spite, however, of the utmost care, dry and windy weather often makes sad work whilst the heaps are accumulating. The lighter litter at the top, especially if it be fallen leaves, is blown about and intermingled with the adjoining heap; whilst groundsel, sowthistle, and other seeding weeds (these I adjudge to the heap for burning), will, though thrown on green, rapidly mature their seeds, which are scattered by the wind in all directions. I was, consequently, induced at length to construct two pits about 14 feet long, 5 wide, and 8 deep, inside measure. They are built of untooled stone, plenty of which is to be had in this neighbourhood, the smoother side to the pit, and are coped at top with waste timber lying about on the premises. The two only cost £5. They nearly join each other, end to end, and are not in the immediate vicinity of the rubbish heaps.

When one of these pits is about one-third filled with clean refuse, I have 1 cwt. of salt spread over it, and a little waste soil on that, to the depth of about 3 inches: old turves, balls from old potted plants, road-scrapings, or any other. The heap soon sinks to one-half of its previous height, during which time fresh stuff is continually being thrown in, which, when it is about 5 feet in depth, is treated as before, until a tolerably solid mass reaches the top. This will again sink a little, when it is treated with a dressing of fresh quicklime, slacked with a strong solution of salt and water, and spread about 1 inch in thickness. Then more clean refuse is piled on, and a good coating of soil packed about it, and it is left to stand while the second pit is filled and treated in a like manner.

By the foregoing process fermentation is continually going on in the different substances whilst the pit is filling; the grass from the lawn mowings (and the smallest quantity is in this way useful), the salt, and the rain, all tending to promote decomposition, and if a few seeds are now and then thrown in by mistake or heedlessness, their vitality is soon destroyed by the fermentation going forward.

I may also state, that the men's water-closet, which is out of doors, is once in the year emptied into the pit, when it is about one-half or two-thirds filled, and greatly adds to the quality of the mass. This becomes immediately deodorised by the soil or refuse thrown upon it, and it fertilises the plants in the garden, when rained upon or watered, quite as effectively as liquid manure, and without the same offence to the olfactory

nerves, which ought never to be annoyed in a garden, and without danger to the leaves of the plants.

I have only to add that the first pit was nearly twelve months in being filled, having been commenced at the fall of the leaves, or October, in one year, and not completed till October in the following year, when the second pit began to be filled. The first pit, however, is left closed up, like a Potato-pit, for twelve months longer, while the second pit is filling, and is not emptied for use till the October of the third year—*i.e.*, two years from the time when the filling process commences, when it lasts for all the purposes required in that autumn and the following spring, and is excellent mould, or "prime stuff" as the men call it. The process of refilling the first pit is commenced as soon as the second pit is filled, when the latter is in turn hermetically sealed, and so remains for twelve months longer. By this means one pitful becomes thoroughly decomposed and ready for use, while the other is preparing. The stable manure is reserved for hotbeds and kitchen garden purposes.

I shall be greatly obliged by any further hints or information on this subject from any of your readers, for I am always but a learner.—Philokepos.

ANNUALS FOR ORNAMENT AND BOUQUETS.

A correspondent, "H. F. F.," says, "I have just been compelled to turn my flower garden into a playground, and have, consequently, lost a great number of perennials, bulbs, &c., and in my new flower garden, both for beauty and bouquets, I must trust in a great measure to annuals." Now this is exactly what many may say of their gardens besides "H. F. F." The massing or bedding-out system has made such rapid and deep inroads into our mixed borders as to completely stamp out of existence the less troublesome, least expensive, and certainly most useful of all flowering plants—viz., hardy flowering shrubby, herbaceous, and bulbous plants, which, though not affording any striking effect, were ever the resort when a bouquet was wanted. Many of those who advocated such plants being discarded, and consigned to the rubbish heap, have often had to wish they had that mixed border to run to.

Where cut flowers are in request I think no greater mistake can possibly be made than destroying borders of perennials and flowering shrubs so that the space may be devoted to summer plants in masses, for the latter cannot be cut much from without impairing their beauty and effect. It is folly to compare the two methods—namely, mixed borders of perennials, bulbs, annuals, and half-hardy plants, with the massing together of plants of one kind and colour; the systems are very distinct, and neither can be employed effectively if not in keeping with the surroundings. There are few, if any, gardens that could not well afford a border for herbaceous plants with flowering shrubs at back, and there are many the pleasure from which would be enhanced were they replanted with a selection of the best herbaceous plants. I consider a good border of perennials, bulbs, and flowering shrubs that bloom in spring, early summer, and autumn, when combined with Phloxes, Pentstemons, Antirrhinums, Dahlias, Ageratums, Salvias, Pinks, Carnations, Roses, and such bedding plants as Calceolarias, Verbenas, Pelargoniums, &c., with Asters, Stocks, Marigolds, Phlox Drummondi, and other annuals, may be made very effective, to say nothing of its adaptability for certain positions, and the variety it furnishes in contrast to the massing system.

Annuals at their best are but indifferent substitutes for perennials and bulbs, though they tell well as adjuncts; as substitutes they bloom when many herbaceous plants are over, but as adjuncts are indispensable, as they furnish bloom when that of the others is less plentiful. Some annuals are of no value for bouquets, though very desirable for decoration: such I shall distinguish with a * prefixed, and to make this paper as useful as possible I propose to give selections of the most useful and showy, so as to meet the various wants of the readers of this Journal.

Asters.—*For Exhibition*:—Reid's Improved Quilled, Truffaut's Perfection Pæony-flowered, and Victoria. *For Beds and Front Lines in Borders*:—(The above do well at the back, as they grow taller).—Pompone Imbricated, Dwarf Pyramidal Bouquet, Dwarf Chrysanthemum-flowered, and Miniature Bouquet. *Three Best Kinds*:—Reid's Improved Quilled, Truffaut's Perfection Pæony-flowered, and Dwarf Chrysanthemum-flowered.

Stocks.—Large-flowering German Ten-week, and Pyramidal Large-flowering Ten-week.

Phlox Drummondi in variety, along with Stocks and Asters, is invaluable for cut flowers, and no plants afford so fine a display as these when in full bloom. They furnish nearly every shade of colour.

TWELVE HALF-HARDY ANNUALS.

Marigold, French, various, 1½ foot.
Tagetes signata pumila, orange, 1 foot.
*Venidium calendulaceum, orange yellow, 1 foot.
Zinnia elegans, double, various, 2 feet.
Calceolaria scabiosæfolia, yellow, 2 feet.
Alonsoa Warscewiczii compacta, scarlet, 1 foot.
*Petunia hybrida (perennial) vars., 1½ foot.
Schizanthus Grahami, red and orange, 2 feet.
*Lobelia erinus speciosa (a perennial), blue, ½ foot.
*Heliophila araboides, blue, ¾ foot.
*Abronia umbellata, rosy lilac, trailer.
Ageratum mexicanum cæruleum, blue, 1½ foot.

TWENTY-FOUR HALF-HARDY ANNUALS.

The preceding twelve.
Salvia Rœmeriana, scarlet, 1 foot.
*Lobelia gracilis rosea, rose, ½ foot.
*Brachycome iberidifolia, blue, 1 ft.
Datura chlorantha, double, yellow, 3 feet.
Marigold, African, yellow and orange, 2 feet.
Salpiglossis, mixed, 2 feet.
Salpiglossis, Dwarf, 1 foot.
Martynia fragrans, purple, 2 feet.
*Oxalis rosea, rose, 1 foot.
*Nemesia compacta, blue, ½ foot.
Schizanthus retusus, scarlet and orange, 2 feet.
Portulaca grandiflora, double, various, ¾ foot.

HALF-HARDY EVERLASTINGS.

Acroclinium roseum, rose, 1 foot.
roseum album, white, 1 foot.
Helipterum corymbiflorum, white, ¾ foot
Sandfordi, yellow, ¾ foot.
Rhodanthe maculata, pink, yellow, and crimson, 1½ foot.
Rhodanthe maculata alba, white, 1½ foot.
maculata atrosanguinea, crimson, 1½ foot.
Manglesii, rose and white, 1 ft.
Waitzia corymbosa, white and amaranth, 1 foot.
acuminata, yellow, 1½ foot.

HALF-HARDY PLANTS WITH ORNAMENTAL FOLIAGE.

(*Annuals, or Perennials proving effective in the first season.*)

Perilla nankinensis, purple foliage, 1½ to 2 feet.
Amaranthus melancholicus ruber, blood-red foliage, 1½ to 2 ft.
Oxalis tropæoloides (O. corniculata rubra), dark bronzy foliage, ½ foot.
Salvia argentea, silvery foliage, 2 feet
Marvel of Peru, Gold-striped, 2 ft.
Cineraria maritima, silvery foliage, 1½ foot.
Solanum texanum, scarlet fruit, 2 feet.
Canna indica aurea vittata, golden flowers, 4 feet.
superba, scarlet, 3 feet.
Canna Warscewiczii, striped, 4 ft.
Sellowii, scarlet, 4 feet.
bicolor, red and yellow, 2 feet.
Fintelmanni, yellow, 3 feet.
nepalensis, yellow, 3 feet.
gigantea, red and yellow, 7 feet.
Ricinus borbonensis, large foliage, 6 feet.
lividus, green fruit, red stems, 6 feet.
macrocarpus, whitish foliage, 6 feet.
roseus superbus, rose-coloured fruit, 6 feet.
sanguineus, red foliage, 5 feet.
viridis spinosus, green spiny fruit, 3 feet.
Zea japonica, striped leaves, 6 ft.

HARDY ANNUALS.—SELECTION OF TWELVE.

Candytuft, dark crimson, 1 foot.
White Rocket, 1 foot.
Alyssum maritimum, white, ½ ft.
Leptosiphon densiflorus, purple, 1 foot.
Tropæolum Tom Thumb, Crystal Palace Gem, sulphur, dark spots, 1 foot.
Prince's Feather, crimson, 2 feet.
*Clarkia integripetala, double, rose, 1½ foot
integripetala marginata, rose and white, 1½ foot.
*Nemophila insignis, blue, ½ foot.
Linum grandiflorum coccineum (rubrum), scarlet, crimson centre, 1 foot.
*Saponaria calabrica, rose, ¾ foot.
Mignonette, Large-flowering, 1¼ ft.

SELECTION OF TWENTY-FOUR.

The above.
Virginian Stock, red, ½ foot.
Silene pendula.
Helichrysum monstrosum, various, 1 foot.
Calliopsis coronata, yellow spotted 2 feet.
Centaurea cyanus minor, various, 1 foot.
Erysimum Perofskianum, orange, 1½ foot.
Scabious, dwarf, scarlet, 1 foot.
Senecio elegans, double vars., ¾ ft.
Larkspur, branching vars., 2 feet.
Centranthus macrosiphon, red, 1 ft.
Poppy, dwarf French, vars., 1 foot.
Lupinus nanus, blue and white, 1 foot.

SELECTION OF FIFTY.

The preceding twenty-four.
Chrysanthemum coronarium, dbl., white, 2½ feet
yellow, 2½ feet
carinatum, yellow, white, and black, 1½ foot.
Calliopsis marmorata nana, marbled, 1 foot
Cacalia coccinea, scarlet, 1½ foot.
*Clarkia pulchella, double, rose, 1½ foot.
* pulchella nana alba, white, 1 ft.
* elegans rosea, double, rose, 1½ foot.
Kaulfussia amelloides, blue, ¾ ft.
Eschscholtzia californica, yellow, 1 foot.
Calendula Pongei, double white, 1½ foot.
Collinsia bicolor, purple and white.
*Convolvulus minor splendens, dark violet, 1 foot.
Lupinus subcarnosus, blue, 1½ ft.
*Œnothera bistorta Veitchi, yellow, crimson spot, 1 foot.
*Nolana atriplicifolia, blue, white, and yellow, 1 foot.
Tropæolum Tom Thumb, Beauty, orange spotted, 1 foot.
Tom Thumb Scarlet, 1 foot.
Whitlavia grandiflora, violet, 1 ft.
*Viscaria splendens, scarlet, 1 foot,
Delphinium cardiopetalon, blue, 1 foot
*Gilia rosea splendens, rose, 1 foot.
Invincible Scarlet Sweet Pea.
*Venus's Looking Glass, blue, ½ ft.
*Sanvitalia procumbens, double, yellow, ½ foot.
*Godetia roseo-alba, Tom Thumb, rose and white, 1 foot.

SELECTION OF ONE HUNDRED.

The preceding fifty
*Gypsophila elegans, white and pink, 2 feet.
*Eutoca Wrangeliana, blue, 1 foot.
Sweet Sultan, purple, 2 feet.
yellow, 2 feet.
*Linaria bipartita splendens, purple, 1 foot.
*Godetia Lindleyana fl. pl., rosy purple, 1½ foot.
Collinsia multicolor, crimson, lilac, and white, 1 foot.
Larkspur, Rocket, various, 1 foot.
Hyacinth-flowered vars., 1 foot.
Collomia coccinea, scarlet and yellow, 1 foot.
*Calandrinia umbellata, crimson purple, ½ foot.
Campanula Lorei, blue, 1 foot.
Catchfly, Lobel's, red, 1 foot.
Lobel's, white, 1 foot.
Eucharidium grandiflorum, red, 1½ foot.
*Eschscholtzia crocea, orange, 1 ft.
tenuifolia, primrose, 1 foot.
*Hibiscus calisureus, rose, 1½ foot.
*Nemophila maculata, white and purple, ½ foot.
Nigella hispanica atropurpurea, purple, 1½ foot.
Leptosiphon androsaceus, lilac.
androsaceus albus.
*Limnanthes Douglasi, white and yellow, 1 foot.
Sphenogyne speciosa, yellow, 1 ft.
*Silene pendula alba, white, 1 foot.
Lavatera trimestris, red, 3 feet.
*Gilia tricolor rosea splendens, rose, 1 foot
nivalis, white, ¾ foot.
*Sunflower, dwarf, yellow, 3 feet.
Sweet Pea, vars., 5 to 6 feet.
*Malope trifida, purple, 3 feet.
Love-lies-bleeding, red, 2 feet.
Lupin, yellow, 1½ foot.
Lupinus hybridus Dunnetti, rose, brown, and yellow.
*Convolvulus minor atropurpureus, violet purple, 1 foot.
*Anagallis grandiflora cærulea, blue.
Centranthus macrosiphon carneus, flesh, 1½ foot.
macrosiphon albus, white, 1½ ft.
Bartonia aurea, orange, 1½ foot.
Calliopsis cardaminifolia, yellow, 2 feet.
bicolor nigra speciosa, marbled crimson, 2 feet.
Centaurea americana, blue, 2 feet.
*Fenzlia dianthiflora, rosy lilac, ½ foot.
Lasthania californica, yellow, 1 ft.
Tropæolum Tom Thumb, yellow, 1 foot.
Tom Thumb, crimson, 1 foot.
King of Tom Thumbs, crimson scarlet.
*Saponaria calabrica alba, white, 1 foot.
*Poppy, Carnation, various, 2 feet.
Pæony-flowered, vars., 2 feet.

HARDY ANNUAL EVERLASTINGS.

Helichrysum macranthum, white, 2 feet.
macranthum nanum, red, 1 ft.
macranthum rubrum, red, 2 ft.
compositum maximum, var., 2 feet.
monstrosum, various, 1½ foot.
Helichrysum bracteatum, yellow, 2 feet.
bracteatum album, white, 2 feet
brachyrhynchium, yellow, 1½ ft.
Xeranthemum annuum, purple, 2 feet.
album, white, 2 feet.

HARDY ANNUALS WITH ORNAMENTAL FOLIAGE.

Atriplex hortensis rubra, red foliage, (2 feet if pinched) 3 to 4 feet.
Chenopodium atriplicis, purple foliage, 3 feet.
Helianthus argyrophyllus striatifolius, double, glossy foliage and bright yellow flowers, 4 feet.
macrophyllus giganteus, 10 ft.

I have grown the above annuals and consider them the best; but tastes may differ, and of those which I have named some may not succeed in particular soils and situations, or not so well as to be useful, and I may have omitted others that are desirable. For the names of such, I, for one, should be obliged. I will conclude with naming a few hardy annual climbers, twiners, and Grasses.

ANNUAL CLIMBERS.

Tropæolum majus, mixed, various, 6 feet.
majus, crimson, 6 feet.
majus, orange, 6 feet.
majus Scheuerianum, straw-coloured, spotted, 6 feet.
majus Scheuerianum carneum, straw, marbled scarlet, 6 ft.
peregrinum (canariense), yellow, 10 feet.
Convolvulus major (Ipomæa purpurea), albus, white, 6 to 10 ft.
major atropurpureus, dark purple, 10 feet.
major atroviolaceus, dark violet, 10 feet.
major Burridgi, rosy crimson, 10 feet.
quinatus, white, lilac spots, 10 ft.
aureus superbus, yellow.

Except in warm soils and situations, the varieties of Convolvulus major require the treatment of half-hardy annuals.

GRASSES.

Pennisetum longistylum.
Eleusine caput-Medusæ.
Bromus Schraderi.
Briza maxima.
Agrostis nebulosa.
Tricholæna rosea.
Lagurus ovatus.
Hordeum jubatum.
Brizopyrum siculum.
Avena sterilis.
Setaria macrochæta.
Paspalum elegans.

—G. ABBEY.

EARLY PEAS.

We have read with unmingled surprise the reported result of a trial of early Peas by "Ronnoc," at page 67 of this Journal, prejudicial to the new-established good character of our First Crop Pea. We can only conclude your correspondent has failed in procuring the genuine stock as introduced by us, and which was distributed last season in sealed packets only.

After the numerous testimonials which we have received as to the unqualified superiority of our First Crop Pea, besides the many favourable reports at various times in the horticultural journals of its good quality, further comments from us may be deemed unnecessary; but the following evidence of its character is worthy of notice, being the result of a trial by Mr. J. Veitch, of the Royal Exotic Nursery, Chelsea, an authority of undoubted experience:—

"I will here mention that all the novelties were procured direct from the firms sending them out.

"I made my first sowing January 16th, with the following kinds:—

	Bloomed.	Gathered.
"1. Carpenter's Express	May 6th	June 6th.
2. First and Best	„ 6th	„ 1st.
3. Carter's First Crop	„ 3rd	May 31st.
4. Ringleader	„ 3rd	„ 31st.
5. Essex Rival	„ 19th	June 9th.
6. Sangster's No. 1	„ 20th	„ 8th.
7. Dillistone's Early	„ 11th	„ 9th.
8. Tom Thumb	„ 12th	„ 7th.
9. Long-podded Tom Thumb	„ 20th	„ 7th."

This proves our Pea to be the earliest (excepting Ringleader, with which it is identical), and several days earlier than Sangster's No. 1.

This independent evidence we think will convince "Ronnoc," that the early qualities of our First Crop Pea are not overestimated, and that probably he did not procure the Pea from a reliable source.—James Cartea & Co.

ROYAL HORTICULTURAL SOCIETY.

The anniversary meeting of the Royal Horticultural Society is to be held on Tuesday next, when the Fellows will have an opportunity of exercising their privilege of electing their representatives to serve on the Council for the current year. The gentlemen who have been recommended by the Council, and whose names we announced in our last Number, are all in their several positions highly qualified to hold such a trust as it is proposed to give them. In General Grey we could not have a better representative of that class without which popular institutions in this country cannot well be carried on successfully; while, at the same time, will be secured that connecting link between the Society and its exalted Patron, which cannot fail to be highly advantageous to its interests. In the very names of the other two gentlemen who have been recommended —Major Trevor Clarke and Mr. Wentworth Buller—we have an assurance of a devotedness to horticulture and to the best interests of the Society, which requires no other confirmation than is exemplified in their past career. So far, then, we believe the Fellows may congratulate themselves.

For a great many years past, but more particularly for the last five years, the financial position of the Society has been a subject that has excited a solicitous and not unfrequently a deep interest in the breasts of the Fellows; and those who take a marked interest in the welfare of the Society look forward to the anniversary meeting with a very special interest as that at which the report of the Council is made, setting forth the condition and prospects of the Society. It is notorious that for several years the statements produced of the financial condition of the Society were comprehensible in the inverse ratio of the Society's prosperity, and for any one to arrive at a clear understanding of the subject from the accounts furnished in the report was next to impossible. Some of the statements show an inkling of how matters stood. In the year ending 1864, for example, even with the most favourable representations of the state of the revenue accounts, a balance was shown against the Society of £2784 16*s.* 3*d.* In preceding years the position of affairs was not more encouraging, and it may be useful to recall a few of the items of expenditure of those days, by way of encouragement or of warning for the present. On reference to former balance sheets we find the sums spent on the following items stated thus:—

	1862.	1863.	1864.	1865.
	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*
Expenses of management	5990 1 2	4083 12 4	2830 6 4	2259 4 9
Kensington Gardens	7260 19 5	4033 4 7	3703 0 3	3323 14 1
Ditto labour only	1823 3 2	*879 5 10	1145 3 7	1155 4 11
Ditto salaries only	1341 16 10	1011 8 3	849 5 9	656 11 6

We shall have an opportunity to speak of Chiswick on another occasion. It will be seen from these facts that the affairs of the Society have been gradually improving, and the expen-

* We cannot pretend to explain how the labour this year should have amounted to a sum so much below that of the preceding and subsequent years; but it appears to show that it is possible to keep the garden in state of perfect efficiency for that amount.

diture, though it has been in excess of the income, has been diminishing, while, as we find from the published accounts, the permanent income has been on the increase. We look forward, then, with no ordinary amount of interest to the statement that will be laid before the meeting on Tuesday, as we anticipate to find an even greater reduction in expenditure as the result of the persistent and judicious economy inaugurated by the present Secretary, whose whole endeavour, we know, is to bring the Society into a state of solvency and usefulness. We do not anticipate that this end is to be attained speedily, nor do we expect to find that the forthcoming statement will show a balance on the right side, but if the balance which it does show, be it on the right side or on the wrong, be counted by as many hundreds as it was formerly counted by thousands, the Society will have good reason to be thankful, and to look forward with hope to the next annual meeting when, by a continuance of the same rigid economy on the one hand, and a liberal encouragement of the purely horticultural objects of the Society on the other, the Society will be in a position financially such as it has, perhaps, never before experienced.

ASPHALTING VERSUS GRAVELLING.

My property, The Grange, West Moulsey, has an avenue of a quarter of a mile from the gate to the house. The gravelled road is much worn-out, and I intend to have something done to it this year. I wish to know whether you would recommend gravelling or asphalting, and which of the two in the long run is the more durable?

On an average I should say a carriage would go over such a drive about four times a-day. The road is about 20 feet broad. —W. B. A.

[In such a long carriage-road we should decidedly prefer gravelling to asphalting. There is a good deal of trouble in mending asphalt when it breaks into holes, and very little trouble with gravel. Besides, if asphalt is not done in a peculiar way to leave a rough surface, and that would wear off, it becomes too smooth to give a foothold to the horses, and would be dangerous in frost. We like asphalting best round houses, stables, &c.; but our experience would lead us to say, Do not use it largely for roads if gravel is to be had.]

"THE MINIATURE FRUIT GARDEN."—Fruit-tree culture does not appear to be on the decrease if we may judge by the rapidity with which Mr. Rivers's little books issue from the press. We have now before us the fifteenth edition of "The Miniature Fruit Garden," which contains all that is to be found in the former editions and much more besides. One useful addition we observe in it is a "Miniature Fruit Garden Calendar," which gives instruction in what is to be done in the various months, and which will be of great service to the amateur.

CUCUMBER FAILURES.

HAVING noticed at page 86 inquiries respecting the cause of failures in growing Cucumbers I am induced to send my mite, knowing that anything tending to their more successful cultivation will be useful to many readers of this Journal.

Some years ago, in, I believe, two former gardeners' time, Cucumbers failed here; they are grown mostly in pigeon-holed pits with dung linings. Several lots of plants failed; the soil was blamed, fresh soil was procured: but in each case the result was the same, till at last it was doubted if they could be grown at all.

On my entering the situation nine years ago I heard of this; but, nothing daunted, I thought I would see what was to be done. I took soil indiscriminately, feeling sure that that was not so much to blame; but—and this is what I would wish unsuccessful cultivators to bear in mind—the water, not properly aired, had injured the plants fatally. I have seen, where such has been used, good fruit become quite disfigured by disease. The stems would gum and die away, till at last a fresh lot of plants was required. I never allow one plant to be watered, even in summer, with water not in good condition. If such is not ready when wanted I let the plants go another day, and if that prove a very hot one I shade a little to keep the plants from flagging.

Water can generally be properly prepared in the summer months by placing it in cans or other vessels exposed to the sun's rays; but even then, if the afternoon of the day be cloudy it is better not to use it.

Another point I always insist on is, when the plants are watered and shut up, and the sun is bright, that a little air early in the morning be admitted; in the summer, say at 7 A.M.

With such treatment I have met with success. During the nine years I have been here I have cut fruit from one lot of plants every year from March till December, and the quantity very abundant.

With respect to ridge culture, I have known plants go off much as "SUBSCRIBER" mentions, but I have found them do very well with me in the following manner:—

Choose a piece of ground as much facing the sun as possible. Dig holes 5 or 6 feet apart, and large enough to contain a barrowful or so of nearly short dung; replace the soil in the shape of a cone, place a hand-light on the top of each cone, and let it remain a day or two for the sun to warm the soil; then plant out, using water when required as before mentioned. I never take the hand-lights quite off, but harden the plants gradually by placing bricks under each corner, and leave them so all the summer, letting the plants run under their sides; by so doing the hand-lights protect the crowns from over-much rain.

I have found it a good plan, if the plants are at all exposed, to grow a row of Peas or Beans on that side as a protection.—GEORGE COULDREY, *Hardenhuish Park, Chippenham.*

THE INTENSE COLD AND ITS CONSEQUENCES.

FORT AUGUSTUS, INVERNESS.—The thermometer at this place registered on

January 3rd	7°	January 16th	12°
,, 5th	8°	,, 17th	13°
,, 7th	8°	,, 18th	10°
,, 15th	5°	,, 22nd	11°

These temperatures (all of which are above zero), are the lowest that have occurred here during the month. The instrument is placed against a wall facing the north-east, at about 5 feet from the ground. We have had a considerable amount of snow, but nothing in comparison with places farther to the east. In the neighbourhood of Inverness and Strathnairn it has, I believe, in some instances been upwards of 2 feet in depth.

I have just made an examination of my Roses, and find that with one exception, Monte Christo, they are all right. This variety, which I fear is quite dead, occupied the snuggest part of my garden, being against a south wall and protected from the east by a porch. On the same wall I have fine plants of Celine Forestier, Triomphe de Rennes, and Safrano. The last of these had some fern placed round it, but the other two had no protection whatever. It is to be regretted that Monte Christo is so tender, for this part of the country at least, as none of the darker varieties, with the exception, perhaps, of Empéreur de Maroc, opens so freely, and its perfume is unsurpassed.

I had a few Tea Roses in pots; I say had, for I fear they are all destroyed. They were placed under a south wall and carefully covered with fern before the frost set in, but notwithstanding the precautions used they are very much cut up. Madame Willermoz is quite dead, and the others, Madame Falcot, Madame Damaizin, Duc de Magenta, Devoniensis, Souvenir d'un Ami, and Madame de St. Joseph have been so severely injured that I entertain very little hope of their recovery. It was simply for the sake of experiment that I grew them at all, and I take this opportunity of stating, that I consider it a mere waste of time to attempt their cultivation out of doors in the north of Scotland. You may grow them well enough, and even manage to carry them through a pretty severe winter, but very few, if any, will ever open well, Gloire de Dijon always excepted. I had certainly two or three fair blooms of Madame Willermoz, but none of the others would open at all.

I must confess, however, that in this respect, with few exceptions, I was equally disappointed with the Hybrid Perpetuals but certainly there could not have been a more unfavourable season for Roses than the last. In June and July we had a prevalence of cold east winds, and their withering effect on the blooms was very perceptible, the petals in many instances were completely shrivelled up, and in others were much changed in colour. As instances, Paul Ricaut was only about a shade

deeper than Charles Lawson, and Gloire de Dijon had as much pink as buff about it. The first two or three blooms of John Hopper came true to character, but those that followed were of one shade of colour, deep carmine. Duchesse de Cambacères was striped, and Jules Margottin had the colour nearly bleached out of it.

King's Acre, about which I ventured to express a favourable opinion in a former letter, like many others in my collection, did not open well, which I much regretted, as I intended to have sent a bloom or two to the office of this Journal. It has an immense bud and great depth of petal. Had the season been favourable I feel certain that it would have made some of the more highly-favoured varieties around it look poor in comparison.

The whole of my Roses were, more or less, affected by the cutting winds before mentioned, but from the following I had some fair blooms:—Anna Alexieff, Baronne Prevost, Baronne Hallez, Charles Lefebvre, Colonel de Rougemont, Comtesse de Chabrillant, Duc de Bassano (fine colour), Empéreur de Maroc, Général Jacqueminot, Gloire de Santenay, John Hopper, Lord Raglan (first few blooms large and fine), Souvenir de Leveson Gower, Monsieur de Montigny, William Griffith, Mrs. Bosanquet, Gloire de Dijon, Celine Forestier (extra fine), Triomphe de Rennes (this variety, like Gloire de Dijon, was in a few of its blooms mottled with pink), Charles Lawson, and Kean. I have many other varieties, but the majority of them were most pitiful-looking objects, so far as their flowers were concerned.

In conclusion, allow me to thank Mr. Kent for his letter at page 46, more especially that portion of it regarding the unpronounceable names given to Roses by the French raisers. I am not aware that it is absolutely necessary for a person to have a thorough knowledge of the French language in order to be a good Rose-grower, but it would certainly make everything connected with the cultivation of our favourites much more agreeable were names given which the generality of people could pronounce. Perhaps some of our eminent nurserymen may be induced to take pity on us, and give the English pronunciation of the French names in the next editions of their catalogues; I feel sure that a large number of their customers would not only be very willing to pay for such a catalogue, but would hail its publication as a boon.—Loch Ness.

Okeford Fitzpaine, Dorset.—The Rose plants here stood the first frost well, but they have in some instances suffered severely from the last one. I do not think that more than four or five are absolutely dead, but there are many of the hardiest Roses skin-blackened, and, what is remarkable, the wood of last year is less discoloured than that of preceding years. I have dug up one or two of the ground plants most smitten, and I find that they are sound in root and wood beneath the mulching and snow-line. The few standards here have borne the severe weather remarkably well. Our leader, the Rev. S. Reynolds Hole, sent me, as a *souvenir*, twelve half-standards of his own budding, which have escaped uninjured. The same may be said of Mr. W. Paul's kind present of seedlings on Briars—namely, two plants of Dr. Lindley, two of Black Prince, one of Globosa, two of Lady Suffield, and a purchased Souvenir de Dr. Jamain. They are evidently hardy Roses. I have no other standards except those fine Tea-scented Noisettes, Triomphe de Rennes, Celine Forestier, Gloire de Dijon, and Maréchal Niel. These withstood the first frost well, with only a little litter over their roots; but when the second frost set in, I tied up all my Yellow Roses (about fifty-six—famous specimens), wholly with straw. Here straw is scarce, otherwise I should have wholly tied up every Rose of all kinds. Every Rose, however, has been littered twice, and I think that I shall come off as well as most people; still many fine plants will have to be cut down, wholly or in part, to the snow-line.

I have had dismal accounts from Yorkshire. Mr. Taylor, of Bedale says—"I lost two thousand standards in 1860; and I do not think one in thirty of two thousand standards will recover. The Manetti Roses are dead to the snow-line, but will spring up again. Henceforth I am all for Manetti." He has found out two truths which I told him years ago—viz., "You will become sick of propagating heaps of untried novelties, and you will adopt ground plants in preference to standards, as they are more easily defended."

I consider that the frost of this year has been more severe than in 1860, though not so lasting. In 1860 the winter succeeded the summer without an autumn. Had such been the case this year, I do not think a vestige of a Rose would have been left. A genial spring and autumn are merciful interpositions between summer and winter, and *vice versâ*.

Such a severe frost as we have had is a good test of the constitution and toughness of Rose plants. The following Roses of the newer kinds have withstood the frost well, with no other protection than litter over their roots. Some have been cut to the snow-line, but these are quite uninjured—namely, King's Acre, Rev. H. Dombrain, Souvenir de W. Wood, Madame C. Verdier, Duchesse de Medina Cœli, Marguerite Bonnet, Dr. Andry, W. Bull, J. Keynes, Duke of Wellington, Rushton Radclyffe, Achille Gonod, George Prince, Duchesse de Caylus, and Marguerite de St. Amand. Not a Rose here has withstood the weather better than King's Acre.

I did not see the foregoing Roses here last year owing to removal, but I hope to prove them fully this year. Much has been said about the growth and constitution of Rushton Radclyffe. I pointed out a plant of it to "D.," of Deal, when here, and I have examined it since the last two severe frosts, and I cannot see a stain in its skin. I have never found it a bad grower or tender; and I have never yet seen a defective bloom of it. I have at any rate bought twelve more plants, which is a test of sincerity.

So many bad Roses have been dedicated to the English that one cannot be surprised that a good Rose should elicit severe criticism. No doubt there are many inferior Roses "edited" every year, but the following varieties will be found to do credit to their year—namely, Duchesse de Caylus, Rushton Radclyffe, Marguerite de St. Amand, Duke of Wellington, Madame Moreau, and Mdlle. Amélie Halphen. I have not placed them in the order of merit. Time will do that for me.

I must not close without thanking my friend "D.," for noticing so humble an individual and his retired residence, at which I shall hope to see him in the Rose and Strawberry season; also, my friend, Mr. Kent (who promises me a visit), for his many good Rose observations, with one immaterial abatement—namely, that I do not think that "*Rosier Hybride Remontante*," however well understood by the French, would be as well understood by the English generally as Hybrid Perpetual. The late Dr. Lindley told me, "No one but a gardener could translate gardening French." Hybrid Perpetual, though we understand the class to which we restrict it, is equally applicable to Tea-scented Roses—a noble class.—W. F. Radclyffe.

Cheshire.—On the 1st of January we had 4° of frost in a small greenhouse till seven or eight o'clock at night, everything being very dry at the time, and consequently there was little or no damage. In earth pits covered with glass and one mat, besides an inch or two of snow till the frost ended on the 22nd, yellow Calceolarias and Gazanias seem unhurt. Roses do not appear to be much the worse. They are not nearly so much injured as they were in 1860-61. Portugal Laurels are none the worse, whilst in that winter many were killed down to the ground. Escallonia macrantha seems very much injured, the leaves being very brown; I may say the same of Buddlea globosa; indeed, I am afraid this is quite killed. There are some deciduous shrubs here, I cannot ascertain how they are at present. Arbor Vitæ and Rhododendrons do not appear to be injured. I am sorry I cannot positively state the lowest degree of cold here, but we have scarcely ever been without snow more or less since the frost commenced. The snow is a great protection. All the Broccolis and Savoys are very much injured, and many are killed.—A. B.

Castle Carey, Somerset.—The following are the readings of the thermometer here on the undermentioned dates:—January 3rd, 9°; 4th, 0°; 5th, 12°. Then the thaw came, and the temperature rose as high as 47° on the nights of the 8th and 9th. The second frost commenced on the 11th, 27°; 12th, 18°; 13th, 3°; 14th, 5°; 15th, 8°; 16th, 21°; 17th, 22°; 18th, 22°; 19th, 19°; 20th, 24°; 21st, 23°; 22nd, 22°; 23rd, 27°, and on the following night it rose to 47°. The thermometer is one of Negretti and Zambra's, and is hung 4½ feet from the ground in an unwalled garden. A Deodar has turned quite brown; all Cabbages, except Brussels Sprouts, have been killed or nearly so, and some fine Pampas Grass is quite white, whether killed or no I can hardly tell.—G. T.

Middlesborough-on-Tees, Yorkshire.—I send you the names of a few plants I noticed in flower in this locality between the two winters we have had, which have been very severe. Vegetation has suffered very much. In our garden most of the Cauliflowers and Broccolis have been killed; Savoys, Curled Kale; Early Sprouting, Lee's White Sprouting, and Snow's Winter Broccoli, are for the most part killed. Cottagers' Kale and Brussels Sprouts have endured the frost pretty well. Endive, Lettuces, Onions, and the other occupants of the garden have been injured very much. Shrubs,

too, have suffered. Sweet Bays, Laurustinuses, Aucubas, and Cotoneasters are killed down, whilst Laurels, Hollies, and many others present the appearance of having been scorched. Most of the tender kinds of Roses have been killed to the ground, and the others have suffered very much. Plants in flower January 8th.—Double Daisy, double Primrose, single Primrose, Wallflower, Garden Anemone, Yellow Jasmine, Winter Aconite.

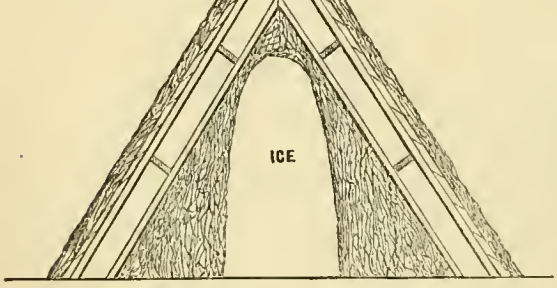
ICE-KEEPING.

The excellent advice recently given on this subject by Mr. Short, whom I have known many years, and on whom may be placed great reliance, deserves the particular attention of all who are in any way interested in storing this most useful article, and although the plan recommended by Mr. Short is not new, it is one which is not generally practised.

Last year I recommended a sort of machine or crusher, and Mr. Short entertains the same view as I had—viz., to obtain, if possible, one solid mass of ice, and to avoid having such a number of cavities as there inevitably must be when ice is stored in lumps about the size of brick-ends, the cavities between which contain an immense body of air, which, ultimately, makes sad havoc with the good-keeping of the ice. I have no doubt but that an ice-grinder will be brought into use at some future day, and at present Mr. Short's plan is the nearest approach to the object I had in view.

We always, if sufficient ice can be secured, make a large stack, independently of the ice-house. We have made one this year, and, taking a leaf out of Mr. Short's book, we have used more snow than we have done hitherto. Indeed, to build an ice-heap without snow, when it can be obtained, is something like a bricklayer putting bricks together without mortar. A fair-sized stack, if well secured, will last till late in summer, and through the kindness of my employer, the ice from one has been the means of saving the lives of many suffering fellow creatures.

To insure a stack of ice lasting a considerable time, we put on two layers of thatch, the first on the ice, and the other on a rough framework, made of fir poles and slabs, as in the accompanying engraving. It takes about thirteen poles for the inside and a like number on the outside. On the latter, thin slabs are placed in a horizontal direction, on which the outer thatch is placed. To keep the outside poles a sufficient distance from the inner ones, short pieces of wood, about 9 inches or a foot long, are fastened between them. The body of air between the two coats of thatch contributes greatly towards the safe-keeping of the ice.



We generally have to put new ice on the top of the old in the ice-house, all of which is snugly covered with straw. Now, it is an old saying that we should let well alone—that is, in this case, if sufficient ice is preserved for the family, why trouble about any fresh plan? and we feel afraid to try any other method, fearing success might not attend our efforts; but I must confess that I am not particularly fond of straw, and if it is not indispensable, a much greater quantity of ice could be stored in any house, and the ice would be saved from the pernicious effects arising from its being surrounded with wet straw, which could be saved for a more appropriate use. If some of the great ice-preservers in this country would state their opinions as to whether ice can be preserved without straw, it would be a great boon to many. Mr. Short did not state whether he used straw or not, but he informed us that we should have plenty of ice in January, and sure enough his prediction was true to the letter.—J. Perkins, *Thornham, Suffolk.*

PEACH TREES FAILING IN A PEACH-HOUSE.

Last spring some of the trees showed nothing but fruit-buds, except at the points of the shoots, and a good many of them had died back in the autumn. Can you tell me what is the cause of the shoots dying back and the buds dropping off in spring? also, why the fruit dropped off before they were properly ripe, having their stones split through the middle, and showing signs of decay? The border has a concrete bottom, and is filled up with 3 feet of soil of a clayey texture. Water is always given when necessary. The trees are beginning to drop their buds this year again.—Grampian.

[When some kinds of Peach trees, as the Noblesse, are becoming past their best, and feeling the effects of heavy cropping, the most of the buds on a shoot will be fruit-buds, and the wood-buds will be chiefly confined to terminal ones. When it is necessary to keep these shoots short and near home it is best to stop early in summer, and thus obtain another leader. When that is not done, such shoots left growing all summer, and with a prominent terminal bud, should not be stopped at all in spring-pruning. Such trees will be distinguished by only one fruit-bud, and sometimes two in a place along the shoot. Younger and healthier trees will have triple buds, of which the central one is generally a wood-bud. By pruning accordingly, we have had fine crops and fine fruit from old trees. The dropping of the buds is generally the result of roots too dry or too much soaked. When the dropping is in moderation it saves thinning afterwards.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

The general preparation of ground for the spring crops having been delayed beyond the usual time, the requisite digging and trenching should be at once performed, preparatory to a more thorough manipulation of the soil before sowing-time. The principal causes of success in growing vegetables are a fine tilth, and as great a depth of earth as can be obtained, without interfering with the subsoil, if the latter is of a sour nature. Clayey and retentive subsoils should, however, be forked over, loosening the ground for some depth. This will facilitate the passage of water from the roots, and by degrees the subsoil will improve. There are but few vegetables which do not require a medium depth of 2 feet to grow in, some more; hence the necessity of deep, well-pulverised soil for their successful cultivation. It is often, too, a rule to put the manure in when digging in trenches; this is a bad system. To be effective, the manure should be completely mixed with the soil to its full depth. For the present, therefore, the dung may be dug in in the process of trenching, and its thorough incorporation with the soil will be best effected when the ground is again worked over with a three-pronged fork. Respecting the application of manures to different soils, I may observe that for warm, dry, soils such as are of a cool nature, as cow and pig manure, should be applied. Horsedung will answer best on medium loams, while on stiff, clayey soils a portion of ashes, road-scrapings, old mortar, or refuse of any kind, may be used in addition to ordinary manure. They will help to keep the land porous, and, consequently, assist the roots of growing crops to permeate the mass of soil. Old Cabbage ground which has been under Sprouts since last August, will now become available for other purposes. Where plenty of *Coleworts* have been provided, some of the latest of the July sowings will supply their place, and stand over for early Cabbage. Old Cabbage ground should be trenched and pretty well manured, as Cabbage is a scourging crop. It is generally followed by a second sowing of Peas, the Peas in their turn succeeded by Celery-beds, and this course prepares again for any of the Brassica tribe. Some good beds of Horn *Carrots* may be sown directly, sprinkling a little *Radish* seed with them. *Cauliflowers* may be turned out of their pots from the cold frames, putting four strong plants under each hand-light. See that spring-sown Cauliflowers do not "draw," if raised in heat; let them be pricked out betimes. Let the *Peas* or Beans sown in boxes be hardened off by degrees in the cold frames preparatory to transplanting. A good breadth of *Broad Beans*

should be planted; for the main crop the Green Longpod will be found very useful. A portion of the *Celery* may be taken up to check "running," and laid in by the heels very deep. Let a bed or two of Celery be sown directly on heat; also of Portugal or Tripoli *Onion* intended to be grown to a good size. *Spinach*, Round should shortly be sown on a warm border, and a little *Parsley*.

FRUIT GARDEN.

Proceed without delay with all pruning, nailing, training, and planting. Apricots and Figs may, however, be pruned when the bearing wood can be distinguished. The nailing of Plums, Pears, and Cherries, ought to be forwarded at all favourable opportunities. At this time a commencement may also be made with Peach and Nectarine trees. It is a good practice to wait till the buds begin to swell a little, as too early pruning only hastens that event, which is not desirable in our fickle springs; by disbudding all superfluous shoots in summer, the knife has very little to do except in shortening the shoots.

FLOWER GARDEN.

Every arrangement should now be made for planting Ranunculuses. Prepare the tubers for planting by removing all small ones. These should be immediately planted by themselves, as but few will flower in the coming season; they will gather strength and size for the next. As the present is the season when the mosses attain their greatest perfection, it will be found the best time to eradicate them; a sharp-toothed iron rake or light drag will be the best implement for this purpose, working it sufficiently to bring up the moss, which should be cleared off and the lawn left for some time, when a second operation may, perhaps, be necessary. In March, sow thickly Sheep's Fescue Grass and Crested Dog's-tail, and apply a dressing of lime rubbish sifted and fresh soil, or the latter and fine bone dust, which, with occasional rollings to keep the land firm, will soon produce a good sward.

GREENHOUSE AND CONSERVATORY.

Now we have sunshine once more, a slight advance may be allowed in the atmospheric heat, especially on bright days, remembering that in proportion as we advance in heat so must we in atmospheric moisture and a free circulation of air. In addition to keeping the conservatory gay with blooming plants, let the arrangement of the interior be occasionally changed by grouping the plants somewhat differently, and adding a few striking ones, as some of the hardiest Palms, for effect.

STOVE.

The plants here will now require an increased amount of atmospheric moisture with a slight advance in heat. I prefer all such advances for the most part on the afternoons of bright days, when solar heat may be enclosed early, and with it a moist and wholesome atmosphere. Begin to repot Orchids, taking them exactly in the order in which they bud; be sure that your material is scalded or half charred to destroy insects. Keep the plants well elevated, and use plenty of charcoal in lumps of considerable size, fastening the whole at last so that the plants cannot be loosened by agitation. Sphagnum or other moss pegged on the top makes a good finish, and is to be recommended in houses which are unavoidably deficient of atmospheric moisture. Syringe plants on blocks occasionally. Keep a sharp eye on insect baits at this period.

FORCING-PIT.

Follow up a proper succession of the plants named in former calendars. Take care to maintain a circulation in the atmosphere as often as the heat will permit. This secured, use abundance of atmospheric moisture, especially in the afternoon and evening.

COLD PITS.

Having now turned our back on, I should hope, the severest part of the winter, one of the first acts in spring should be, to use a commercial phrase, "taking stock." Some havoc will be found both in the flower garden and in the culinary department, and steps should be taken without a moment's delay to recover lost ground. The cold pits or frames containing stores of half-hardy plants should be closely examined. Most of our best cultivators of half-hardy flowers for the modern improved massing system lay in their stock by propagation during July and August of the preceding year. Among these, in the majority of cases, will be found blanks, and some of the best store pots or established plants should be introduced into heat in order to procure early cuttings. No delay can be permitted in this matter, for much of the success in massing depends on having plenty of forward, well-established, and well-hardened plants at bedding-out time.—W. KEANE.

DOINGS OF THE LAST WEEK.

THOUGH our stiff ground is still very wet, took the opportunity of trenching and leaving rough-ridged any ground now uncropped, as that lately occupied by Celery. Cleared off for the same object of trenching, two pieces of Turnips in good condition, that were transplanted last autumn, and which were not at all injured by the frost, owing to the slight covering of snow. These Turnips were placed in a heap in a shady position, and a little litter thrown over them, and they will keep sound and crisp much later in the spring than if they had been left growing in the ground.

Storing Turnips.—The neatest, and seemingly the most workman-like mode of doing this is not always the best. We shall presume that in either case the Turnips are put away before they are injured by frost. We have sometimes noticed, when nice dry Turnips and Mangolds have been carefully built in large round heaps, or in long, span heaps, thatched and earthed, with straw wisps, or wooden openings left for air, that, nevertheless, the roots had heated and grown prematurely, and been taken out much injured, many being decayed and rotten, whilst from other heaps, and especially in the case of Turnips, when thrown carelessly together to a depth of 2 feet, or less, and merely a little litter strewed over them to keep out severe frost, they would come out as fresh and as juicy as when they were thus placed in a heap. If the rains should pass through to the heaps, and these were not deeper than those referred to, the roots would not suffer in consequence. It is as well to keep Mangolds dry, as if wet a little frost injures them.

There is little doubt that we often injure by mistaken kindness. We had a piece of fine Endive in an earth-pit, over which we put some old patchy sashes, as the weather became severe, and threw some litter over the sashes when the cold was greatest. The position was unfavourable to the Endive, the autumn being so wet, and though we had a pretty fair supply, the Endive would not have kept, if we had been never so anxious, as it (the Batavian) has done in front of a south wall with merely a little rough hay shaken over it in a few of the coldest nights, and where it is now green and healthy. We have had the same sort standing out of doors all winter, each row planted on a slightly elevated ridge (and consequently, there was a valley between every two rows), with but little or no protection, while those coddled in frames suffered from damp. Lettuces in frames over old hotbeds, required a considerable thickness of litter over the glass to keep them fit for use, whilst a lot, pretty forward, in an open orchard-house was kept quite healthy with a mere sprinkling of litter, and that because the atmosphere of the house was so much more open and dry than that of the frame.

Sowed Early Horn Carrots, with Radishes between, over a hotbed; thinned the smallest from the first Radish-bed to give more room for those that will soon be fit to pull, the present supply coming from an earth-pit protected all the winter by old sashes and a covering of litter in severe weather; filled another light with Asparagus, the last filled just appearing whilst the first bed is about over. Sowed Tom Thumb Peas in pots to fruit there, and Dillistone's Early in semicircular drain-tiles, to produce under protection; and will sow Sangster's, &c., in turf for transplanting in the open air in a week or two, as sowing out of doors is of no use with so many eyes looking after the seed to feed as many mouths. Turned out a lot of Potatoes from small pots into producing pots, put a number more of Ashleaf and Veitch's Early into small pots, to be transplanted into beds, where they can have protection, and will start others ere long to go out of doors. Our seed Potatoes have not kept well this season, having suffered much from disease, though they were housed in good order, a fine sample then, and kept cool ever since. Put in successions of Sea-kale, Rhubarb, &c., and sowed Celery and other things in heat. Repotted Cucumber plants which have put on a fine green livery since we have had a little sun. Finished a hotbed for a frame, put the earth in the centre, covered all over with soil, and hope to plant out in a few days, as we like to have the dung-frame and the hot-water pit to have a race with each other, and they generally prove pretty equal antagonists after this time, when litter can be had to bank up the frame. Planted out in a pit three lights of Dwarf Kidney Beans, from small pots, to succeed those now in pots, as after this time planting-out saves much labour in watering, though nothing does better in pots; but now we shall want almost every pot to be at liberty for other purposes.

The first piece of Mushroom-bed in the Mushroom-house

has fortunately done us good service, and the third piece has been spawned and earthed over, the earth having stood in the Mushroom-house in barrows for a couple of days to become heated before being used. For a few nights we were troubled with some huge snails, that would clear off all the inner parts of several large Mushrooms in a night. We fear they were introduced into the house with the ball of soil round Rhubarb roots. We have seen no more signs of their presence lately. We know of no means of getting rid of them except searching with a candle at night. They generally keep out of sight during the day. They are less easily enticed with greased Cabbage leaves or brewers' grains than slugs.

FRUIT DEPARTMENT.

Looked over the fruit-room. Some kinds of fruit have gone considerably within eight days, and that from no effects of frost. Sowed Melons in the bed prepared for Cucumbers. Though seedlings do well enough raised in heat from flues or hot water, we have it may be a prejudice for raising them in the heat from fermenting material. We find it is of no use sowing such seed, unless protected from mice. No better plan for sowing such seeds can well be adopted than sowing in pots, 2½ inches down from the rim, covering with a square of glass, and placing something heavy on the glass to prevent its being moved.

Strawberry Forcing.—The plants in bloom are looking much better and stronger since the change in the weather. Those set on the top of a firmly trodden bed in a pit, yielding just the slightest heat at the bottom, are looking well, but a part will have to be moved, and the bed made to the right level, so that the pots may stand at the right distance from the glass. At this season we would have preferred temporary wooden shelves or a regular stage for the purpose, but in gardening much must be done by makeshifts, though it is always better to be able to dispense with them, as most makeshifts, if they save in material, greatly increase the labour. We had two shelves for Strawberries in the Peach-house, but we wanted another near the front, where the sloping roof terminated on the wall-plate, about 18 inches above the inside border. There being no wood for a shelf to be obtained, but some round iron rods that had formed part of a fence being at liberty, pots of the requisite height were set bottom upwards, a brick placed on the top of the pots to give more bearing room, and three of these rods laid along on the top of the bricks. A turf 9 inches wide, and 1 inch thick, was then laid along the rods, grass side downwards, a little leaf mould sprinkled over the turf to make all level, and on this the row of pots was placed, and no better home could be given them. We have used such rails for shelves suspended from rafters, but we object to their greater weight for such purposes.

One advantage of thus setting the pots on turf is, that there is little likelihood of their being over-watered. Early Strawberry plants are often greatly injured by water standing in the saucers when the plants on shelves stand in these, and they must do so often to prevent the drip falling on other things. Hence the importance of the saucers raised in the centre invented by Mr. Ingram, of Belvoir Castle, as though water may stand in the saucer, the bottom of the pot will not be in the water. We have often gained the same object in a much more clumsy way, by placing crocks, &c., in the middle of the saucer for the pots to stand on. Without such contrivances, and where a little drip is of no consequence, we prefer turf or moss to saucers on shelves, but where neatness and effectiveness are to be combined commend us to Mr. Ingram's saucers.

ORNAMENTAL DEPARTMENT.

After the frost it was necessary to go round the walks, sweep them, and remove from the grass any bits of gravel that had been swept over with the snow, when brushed from the walks. Cleared off wood and a few leaves from the lawn, and rolled with the light wooden roller, which gave it a level and green appearance. We will have the beds and borders dug and freshened as soon as possible.

During several dry, frosty days, pruning shrubs and cutting Laurels was proceeded with, as we find in many places that to keep Laurels healthy to their bases, and to prevent their becoming sickly at their points, they require frequent shortening. These prunings come in valuable for many purposes of sheltering crops, and when laid in heaps, and trodden firmly in the course of the summer, and especially if left to another year, nice stakes can be obtained for many purposes, and what is not used for these and firing, will go to the charring and burning heap.

The conservatory was fresh arranged, and Cinerarias and some other plants in bloom taken from the Peach-house, &c., the greater number of plants being moved from thence to the late vinery, so as to afford room for Strawberries on shelves, and to set at liberty the floor for bringing on the Potatoes and Peas already referred to. Much work was also done in shaking out and repotting Fuchsias, placing them at the back of the vineries, potting Pelargoniums in their blooming-pots, and setting them at present on a stage in the second vinery, potting young plants for succession, and preparing to give more room to Scarlet Pelargoniums for pots and beds. Afforded more room and a more airy position to double Pruuus, and Deutzias in bloom. The change in the weather will tell beneficially on all forced shrubs and bulbs. For general management see previous Numbers.

Accumulated Heat.—This matter (see pages 81 and 82), is of great general and gardening importance. Mansions have been burned down because large beams abutted on a kitchen chimney. Other houses have been saved because the evil was found out in time. Two years ago, against remonstrance, the hearthstone of a fine upper room was formed, not of a stone, as in Mr. Pearson's case, but of small flooring tiles, with, of course, the joists and rubbish, and lath and plaster beneath them. Like the glazier smashing windows, such a plan might be good for trade, because so conducive to a conflagration. The case of the hotbed heated by a flue is also suggestive. We helped many years ago to manage a long Pine-pit, heated in a similar way by strong flues, with a floor of strong slabs fully 20 inches above the flues, and no plan could have answered better, and we never heard of any accident; but then there were wooden funnels on each side to let the heat from the chamber into the atmosphere of the pit, and consequently the heat from the flues would not accumulate solely in the chamber. There is yet something to be learned about heating in close chambers. In this case dry heat may so accumulate as to result in burning, and in some other cases we have found, that with plenty of heat in the heating medium, bottom heat above the chamber could not be sufficiently obtained until there was just as much of an opening into the chamber as would prevent the air there being quite still and isolated.—R. F.

COVENT GARDEN MARKET.—February 6.

A marked increase in our supplies generally, particularly of Pines and hothouse Grapes, the demand for the latter falling far short of the supply. French imports as usual. Cornish Broccoli has much improved during the past week. The best samples of Potatoes have again advanced in price.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ..... ½ sieve	2	0	to 3	0	Melons ..... each	2	0	to 4	0
Apricots ..... doz	0	0	0	0	Nectarines ..... doz.	0	0	0	0
Cherries ..... lb.	0	0	0	0	Oranges 100	5	0	10	0
Chestnuts ..... bush.	10	0	18	0	Peaches ..... doz.	0	0	0	0
Currants ..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	3	0	6	0
Black ..... do.	0	0	0	0	kitchen ..... doz.	2	0	4	0
Figs ..... doz.	0	0	0	0	Pine Apples ..... lb.	4	0	8	0
Filberts ..... lb.	0	0	0	0	Plums ..... ½ sieve	0	0	0	0
Cobs ..... lb.	0	9	1	0	Quinces ..... doz.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Raspberries ..... lb.	0	0	0	0
Grapes, Hothouse .. lb.	4	0	8	0	Strawberries ..... lb.	0	0	0	0
Lemons 100	5	0	10	0	Walnuts ..... bush.	10	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... each	0	6	to 0	8	Leeks ..... bunch	0	6	to 0	0
Asparagus .... bundle	6	0	10	0	Lettuce ..... per doz.	2	0	3	0
Beans, Kidney, per 100	3	0	4	0	Mushrooms .... pottle	1	0	2	0
Scarlet Runners ½ sieve	0	0	0	0	Mustd. & Cress, punnet	0	2	0	0
Beet, Red ..... doz.	2	0	3	0	Onions .... per bushel	4	0	5	0
Broccoli ..... bundle	2	0	3	0	Parsley ..... per sieve	4	0	6	0
Brus. Sprouts ½ sieve	3	6	0	0	Parsnips ..... doz.	0	9	1	3
Cabbage ..... doz.	2	0	3	0	Peas ..... per quart	0	0	0	0
Capsicums 100	0	0	0	0	Potatoes ..... bushel	4	0	6	0
Carrots ..... bunch	0	6	0	8	Kidney ..... do.	5	0	6	0
Cauliflower ..... doz.	4	0	8	0	Radishes doz. bunches	1	0	1	6
Celery ..... bundle	2	0	3	0	Rhubarb ..... bundle	0	9	1	6
Cucumbers ..... each	1	0	2	0	Savoys ..... doz.	3	0	4	0
pickling .... doz.	0	0	0	0	Sea-kale ..... basket	2	0	3	0
Endive ..... doz.	2	0	0	0	Shallots ..... lb.	0	8	0	9
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	5	0	6	0
Garlic ..... lb.	0	8	1	0	Tomatoes .... per doz.	4	0	0	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	6	0	0
Horseradish .. bundle	4	0	6	0	Vegetable Marrows dz.	0	0	0	0

TRADE CATALOGUES RECEIVED.

E. G. Henderson & Son, Wellington Road, St. John's Wood, London, N.W.—*Catalogue of Flower, Vegetable, and Agricultural Seeds.*

W. Armitage & Son, 4, New Street, Huddersfield.—*Catalogue of Flower Seeds.—Catalogue of Vegetable and Agricultural Seeds.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

"The Mulberry is Wiser than the Peach" (*F. T. B.*).—This proverb has been versified as follows: -

"The Peach tree, with too eager haste
To show its blossoms to the sun,
Gives its pretty bloom to waste
Before the frosts of spring are done.

"Much wiser is the Mulberry,
Which only thinks its leaves to show
When leaves are green on ev'ry tree,
And Roses have begun to blow.

"They most ensure success and praise
Who, guided by the rule of reason,
Do fitting things on fitting days,
And dress as most becomes the season."

Potatoes—Early Ross (*J. M. O.*).—It might be obtained from some seedsman in Scotland. We do not know it here.

Dissolving Bones (*J. P. Gravel*).—To form superphosphate of lime the proportions are 1 lb. of bones, 12 ozs. of sulphuric acid, and 12 ozs. of water.

Soap-suds as a Manure (*P. B.*).—If Dr. Dresser stated in his lecture that soap-suds not only are not fertilising, but are "a deadly poison" to fruit trees, he made a great mistake.

Working Plans of Greenhouses (*Handy Man*).—It is quite impossible for us to furnish them. Nothing is more easy than to show a local carpenter the kind of house you need, and ask him to send a detailed estimate.

Verbenas in Frame Mildewed (*V. S.*).—The shoot was much affected with mildew. No amount of tobacco smoke will destroy it. You must dust the spots on the leaves and stem with flowers of sulphur through a thin muslin bag; apply the sulphur to the under as well as the upper surface of the leaves. This and more air will effect a cure. We do not observe any trace of thrips, therefore discontinue the tobacco fumigation.

Muscat Hamburgh Grapes Cracking (*A. B.*).—Your house must have been kept close and moist. The cracking is easily accounted for by the attack of mildew, on the first appearance of which you should have dusted the affected parts with flowers of sulphur. The fact of your house not being heated renders it difficult to keep its atmosphere dry when the fruit is ripening; but you may do much by giving air early and shutting up early, affording, however, a little ventilation at night. The outside border will be unfavourable to the ripening of the fruit, particularly if the weather be wet. We do not consider the Muscat Hamburgh a suitable Grape for planting in cool houses having outside borders.

Summer-pruning Peach Trees (*W. C.*).—The shoots stopped at the third leaf, if the laterals produced upon them during the summer are stopped at the first leaf, will not require any pruning in winter, as they will for the most part be so many clusters of spurs and fruit-buds, and to cut them in would be to sacrifice the crop. Any, however, which are very long may be shortened to within an inch of their base. The shoots left at 9 inches apart to cover the wall are not to be shortened, except to cause the production of sufficient shoots to cover the wall at the above distance apart. They may in that case be shortened at the winter pruning to half or two-thirds of their length, as may be necessary. We cannot name plants from mere leaves.

Plants for Shaded Border (*A Subscriber*).—You say "the south side of garden under the 10 feet-high wall, consequently shaded by the wall." We conclude it is to the north of the wall, and, if so, the plants are few that will grow in such situations. Vinca major and minor, and London Pride, are about the only plants that would thrive near the wall, though at some distance from it Primulas, Auriculas, Pinks, Sweet Williams, Stocks, and most herbaceous plants would succeed tolerably well. If, on the other hand, the border is to the south of the wall, it would answer admirably for early-flowering bulbs and plants, as Snowdrops, Winter Aconites, Crocuses, Tulips, and Hepaticas, succeeded by bedding plants, as Pelargoniums, Lobelias, Calceolarias, and many others, as well as Stocks, Asters, and various annuals.

Laxton's Pea (*Amateur*).—As Messrs. Carter's observations appeared in the columns of another Journal, it is in those columns your further comments should be inserted.

Man Traps (*J. F. S.*).—It is not legal to set them either in a walled or unwalled garden. Blanche Superbe and Louis Philippe are Rhododendrons that would suit you; but if you write to any nurseryman and tell him what you need, he would supply you.

Culture of Ferns (*Major C. H.*).—"The Fern Manual" contains what you require. If you enclose sixty-four postage stamps with your address you can have it free by post from our office.

Book (*Fred*.—Henfrey's "Structural and Physiological Botany" will suit you. A botanist's dissecting microscope may be purchased for a guinea.

Pit Perfectly Shaded (*B. H.*).—No plant will thrive in such a sunless situation except some of the Ferns. We advise you not to heat so small a structure, but to be content with hardy Ferns. Any of these will grow in your pit.

Our Journal (*H. H.*).—You ought to receive it on Friday. We publish now on Thursday morning. We cannot insure a copy not to be delayed by the Post Office. If it frequently occurs, write a complaint to the Secretary, General Post Office, St. Martin's-le-Grand, London. He will give the local postmasters a wigging.

Apples for North of Ireland (*A. F. K.*).—We have no doubt that Blenheim Orange and Coe's Golden Drop will ripen in your district.

Trained Trees (*T. P. F.*).—The plate in Kennett's "Parochial Antiquities" merely represents evergreens trained round arched recesses in the front of Sir John Walter's house.

Substitute for Cloth Shreds.—We are gratified to find the very excellent substitution of india-rubber cloth for the old-fashioned and harsh cloth shreds is likely to be generally adopted. We observe the notice of this article (Journal of Horticulture, page 90). The same idea was suggested to us some months since by that eminent horticulturist, Dr. Wallace, of Ballymena, Ireland, and as we felt thoroughly convinced of its efficacy, we decided upon introducing it. Being offered in convenient quantities for large or small requirements, we doubt not it will soon entirely supersede the old shred.—James Carter & Co.

Training Peach Trees in a House (*E. S.*).—We do not advise the covering of the back wall of your vinery, 35 feet by 12 feet, with Peach trees, for unless the Vines be more than the usual distance apart the Peach trees, though they may grow well, will seldom, if ever, produce a crop. The case will be different if the Vines are 5 or 6 feet apart; enough light may then reach the back wall for the well ripening of the wood and perfection of the buds of the Peach trees. If the Vines are a less distance apart we would advise the Peach trees to be grown in pots as pyramids or bushes, and to be set in the intervals between the Vines, so as to afford them all the light possible. If you plant the Peach trees against the back wall, the shoots should not be trained upright, as shown in your letter, as the lower parts of the branches will soon become naked. Instead of training the shoots upright, bring them down to an angle of 45°, and cover the wall with shoots 9 inches apart in diagonal cordons. The laterals, or side shoots, if they grow more than an inch, are to be pinched at the third leaf, but any short stubby shoots are not to be interfered with under any circumstances. The shoots once stopped are throughout the season of their production to be pinched at the first leaf after the first stopping. The leader must be allowed to grow, and it need not be stopped or pruned back at the winter pruning, but bent down to an angle of 45°, and it will break throughout its length. Any laterals upon it should be pinched at the first leaf throughout. The laterals, at the winter pruning, if more than 3 inches long, may be cut back to a wood-bud, and if it be surrounded by fruit-buds all the better. The Peach will not bear the same pruning and spurring as Vines.

Acacia platyptera after Blooming (*J. D.*).—The weak and dying wood should be cut clean out, and any long straggling shoots cut back, so as to promote the formation of a compact head or plant. When the young shoots are an inch or two long, the plant should be repotted, carefully removing the old soil, or as much of it as possible, without destroying or injuring the fibres. Do not give a large shift, drain the pot well, and over the drainage place an inch or two of the rougher parts of the compost, which may consist of two-thirds turfy loam, one-third sandy peat, and one-sixth of silver sand. Keep the soil moist, but be careful not to over-water, and keep close and shaded for a few days until the roots are working in the fresh soil.

Lilium lancifolium rubrum (*Idem*).—The top-dressing should at once be removed, also the offsets. Look to the drainage of the pots, remove as much of the old soil as can be done without injuring the roots, and replace it with fresh, some of the coarsest being placed over the drainage. The top-dressing must be repeated when the shoots are a few inches above the rim of the pot.

Pine Apples (*W. C. W.*).—The three we like best are the Queen, Smooth-leaved Cayenne, and Black Jamaica, and we grow one-third Queens in proportion to two-thirds of the other two collectively. They should not have a temperature of less than 55° at night in winter, and fruiting plants should have a night temperature in winter of 60° to 65°. Succession plants will endure a temperature of 45° if the soil and atmosphere are dry, but it is not good for them. The principal propagators of Camellias are the Ghent nurserymen.

Grafting-wax Making—Grafting Hollies (*A Four-years Subscriber*).—A good grafting-wax may be made of Burgundy pitch 8 ozs., resin 8 ozs., bees's wax 4 ozs., and lard 4 ozs. Place the ingredients in a pan, and melt them over a slow fire. It should be used warm. Hollies may be grafted when the plants recommence growth, which will be during April, but the exact time must, of course, depend on the season. It should be done before the buds of the scions begin to swell.

Grape Bunches Becoming Tendrils (*A Subscriber*).—It is mainly to the immature state of the wood that the curling of the bunches is due. The embryo bunches are but imperfectly formed, and the roots we apprehend are in a cold, deep, and wet border, hence the bunches curl up and become tendrils. You can do nothing to prevent this beyond keeping the border as dry as you can in winter, so as to preserve as many of the fibres as possible, that they may collect food for the support of the bunches. In cold wet borders the Vines do little towards the feeding of the bunches at an early season, for the chief fibres perish in winter, and others are not reproduced until the soil has become warmed by the sun's heat. The covering of the border is good, and the material employed for the purpose should be removed early in April. Raising the temperature will not prevent the bunches turning into tendrils, but will increase their tendency to do so. The temperature from the present time up to April should never exceed 40° from fire heat; this will allow the Vines to break naturally. If you commence with the last week in March increase the temperature to 45° the first week, and then 5° fortnightly until you reach 60° at night, which is to be the highest night temperature until the Vines are in flower, when the temperature may be increased to 65° at night until the blooming is past; afterwards keep it at from 60° to 65° at night. You cannot maintain too moist an atmosphere from the swelling of the buds till the Vines flower, when they must not, of course, be syringed, nor can they have too much air, taking care to avoid cold currents. The trough may be filled with clear liquid manure, which is better than rain water. The Vines being old their roots have, no doubt, gone down into bad soil, and far out of the influence of the sun's heat and of air. The only effectual remedy will be to make a new border and plant young Vines. The old Vines are far too old to lift and replant.

Azalea Leaves Falling (*Walmer*).—The Azalea leaves were browned at the tips as if the plants had been heavily syringed, and water allowed to drop or hang from them, or the house may have been kept excessively moist. The foliage at this season should be kept dry, and the atmosphere

also dry by giving abundance of air. The potting in October has led, we presume, to the plants being excessively watered, to the destruction of most of the fibres, and that we think is the cause of the leaves falling, as they are anything but mature. We can only suggest that the plants should be very carefully watered, none being given until the soil becomes dry, and yet not so dry as to cause the foliage to flag, and then give sufficient water to show itself at the bottom of the pots. Give all the air possible, do not syringe the plants until they bloom, and then afford them a light situation.

Gloxinia, Gesnera, and Achimenes Culture (*C. W.*).—All thrive well in a compost of turfy loam, peat, and leaf mould in equal parts, adding sand if the soil require it. It should be sandy. The size of pot for the Gloxinias will depend upon the size of the tubers. Those two, three, or more years old should, in the first instance, have pots twice their diameter, and when they have grown a few inches high, and filled the pots with roots, shift into pots 3 inches more in diameter. The Gesneras, if of the tuberous-rooted kinds, as G. purpurea macrantha, require the same sized pots as Gloxinias; but if of the scaly-rooted kinds, as G. zebrina splendens, they should have pots in proportion to the number of roots put into each. A seven-inch pot may have five tubers, and a 12-inch pot twelve roots. For Achimenes, pots are not so good as pans 8 inches deep, and 1 foot to 1 foot 6 inches wide. The tubers may be placed in these at an inch apart. All require the temperature of a stove—from 60° to 65° by night, and from 70° to 85° by day, or they may be started in a hotbed, and when a few inches high removed to a vinery at work.

Tritonia Planting (*Idem*).—You may plant out these any time after March, hardening them off well previously.

Planting Vines (*A. B. C.*).—We do not perceive the propriety of double-rodding each Vine, nor what you will gain thereby. The case will be different if you have two rods to each Vine and allow a proper distance between them—from 2 to 2½ feet. The Frankenthal is an excellent Grape. Your plan of planting Frankenthal for permanent Vines, and Black Hamburghs between them for fruiting as soon as possible, is anything but advisable, though you may do so and take a heavy crop on the Black Hamburghs the second and third season, and then cut them out; but we are obliged to add that we have tried it, and find the permanent Vines do not make such progress as those not having temporary Vines between them, and in comparison have lost one year in three. On the removal of the temporary Vines, after having borne two heavy crops, many of their roots must remain in the border, and so foster fungi, which, spreading or being in contact with the roots of the permanent Vines, attack and destroy them, rendering the removal of the Vines a work of necessity. This has been the case in those instances of temporary and permanent Vines in one border that have come under our immediate observation. We do not, therefore, advise the planting of permanent and temporary Vines in the same border; but if Grapes are wanted in greater quantities than the cropping of the newly-planted Vines may be allowed to produce, the wisest plan is to grow them on Vines in pots.

Wash for Peach Trees and Wall (*Idem*).—You may form a solution of 8 ozs. of soft soap in a gallon of water, and add thereto a lump of unslaked lime and flowers of sulphur in the proportion of two-thirds lime and one-third sulphur, sufficient to bring it to the consistency of paste, which you may reduce to the thinness of whitewash by adding tobacco water. Such a composition would be excellent for the wall; but for the trees we would reduce it in strength, and besides, we do not see how you will reach the back of the branches next the wall, unless the trees are unnailed. They may be washed with a solution of 6 ozs. of soft soap in a gallon of tobacco water, diluted with six times its volume of water—that is, if the tobacco water from the tobacconist be used, with a sufficiency of sulphur added to bring it to the consistency of paint.

Sowing Rhododendron Seed (*Idem*).—The best way is to place 6 inches of very sandy peat in a frame, so as to bring the surface to within that distance of the glass, level the soil, and sow the seed, just covering it with fine soil. The seed may also be sown in shallow boxes in the same soil, and be placed in a cold frame. From the middle of March to the beginning of April is a good time to sow.

Heating by Gas (*G. K. L.*).—In No. 269 of this Journal, published May 22nd of last year, are described various modes of heating by gas, with a drawing of the apparatus of each. Any one of those modes would do for your small pit.

Conduct of Gardeners (*A Country Vicar*).—We have repeatedly published in our columns under what circumstances—namely, the full consent of their masters—they should give away or exchange plants, cuttings, &c. If you know of any who transgress the rule, we recommend you to inform their employers.

Convolvulus mauritanicus for Edging (*C. T. H.*).—It makes a good edging for vases and rustic baskets; but we have not tried it for edgings to beds, though it thrives in the open ground in our light gravelly soil, and would probably make a good edging. The plants should be 1 foot apart. It is worth a trial, being a very pretty plant.

Trees and Shrubs for Bog Soil (*G. S.*).—The best trees are Alder and Birch; and as for shrubs, we know of none that would thrive in such wet and undrained ground.

Pruning Old Wall Trees (*Idem*).—You can do nothing with trees that have not been pruned for twenty years, beyond cutting out the old wood. The planting of young trees between the old ones is not good, as the permanent old trees will have spread so much from the wall as to shade the young ones and interfere with their growth. If the old trees are worn out or unfruitful we would stub them up, renew the soil, and plant young trees.

Grafting Rhododendrons (*A Lover of Flowers*).—The best time to graft Rhododendrons is towards the end of August or early in September, when the shoots have ripened. The shoots of stock and scion should be of equal thickness, or as nearly so as possible. It is best performed by what is known as side grafting, putting in the grafts near the soil. The head of the stock should be cut off 6 inches above the union, leaving some leaves on it. To this the graft may be tied. After grafting, place and keep in a close, cold frame until the union is complete, which will be the case in six or eight weeks. Then give air and harden off. In spring the part of the stock above the graft may be cut off neatly immediately above the point of union. The grafting may be done in spring just at the time growth commences, but success is not so certain in spring as late in summer.

Dissatisfied Gardener (*Hard Done By*).—You require at least one more active strong assistant, and the fowls will create quite enough work for one man. You might lessen Sunday work by procuring on Saturday what is wanted on Sunday; but some things you must attend to on that day.

Italian Tuberose Culture (*J. V.*).—The roots should be potted in March, singly, in six or seven-inch pots, in a compost of turfy loam, enriched by the addition of one-fourth well-rotted manure, or one-third leaf mould. Peel off the loose outer skins, but not into the quick, and plant them so deeply in the pots that the crowns will be covered with an inch of soil. Any offsets should be removed. If you have a hotbed plunge the pots in it, keep the soil moist, but not wet, until the roots push, then give more water; indeed, they require plentiful supplies of water. Afford abundance of air, and when the stems begin to rise gradually withdraw the pots from the hotbed, and remove them to a light and airy situation in a greenhouse. After potting you may place the roots in a greenhouse, but they will not flower so finely as if they were placed in a hotbed, in consequence of which the pots become filled with roots in a short time, and the plants are considerably advanced for bloom before their removal to the greenhouse. Water well and syringe frequently to prevent injury from red spider.

Cultivating an Acre (*Suffolk*).—If you send thirteen postage stamps with your address you can have free by post "How to Cultivate Two Acres Profitably." It will give you all the information you seek.

Flemish Cherries (*E. C. D.*).—The article you refer to related to the existence or non-existence of trees planted by Henry VIII.'s gardener. Flemish Cherry trees may be had of any nurseryman.

Festoons of Climbing Roses (*Rector*).—One of the simplest and best examples of this work we have seen was at Luton Park, where a series of festoons surround a sort of oval, in the interior of which were beds of dwarf Roses, divided by gravel walks and broad margins of grass, the whole forming a pretty design. The pillars supporting the festoons were about 8 feet high and the same distance apart, and the fall of the festoons about 18 inches, leaving 6 feet clear from the ground, so as to allow room for persons to walk under them without being so high that the Roses could not be gathered when wanted. The pillars were ordinary ash or chestnut poles, with the bark removed, and the part in the soil and a little above it was charred before being inserted in the ground. The poles were about 3 inches in diameter in the middle, or sufficiently stout to withstand the force of the wind when the plants were full grown, and it is better to err on the side of undue strength than in the contrary direction. A simple hoop at the top of the poles will hold a staple, from which a chain or wire may be carried from one to the other. If a chain be thought too expensive a very good substitute may be formed of pieces of rather stout fencing wire, about a foot long, with the ends bent into hooks or loops, and linked together. When covered with Roses such a support looks as well as the most expensive chain. We have seen a much higher series of pillars, but they are long in becoming clothed with the Roses; and to wait ten or more years, as we knew in one instance, where a number of unusually tall Rose pillars were expected to produce an effect, is too long. We may observe that at Linton Park the festoons form the two longest sides of the oval; a broad walk passing lengthwise through the space is spanned by an arch of Roses, the springings of which are of the same height as the pillars alluded to, a short level bar connecting the top of the festoon pillar with the pillar supporting the arch, and thereby forming an agreeable union.

Removing an old Banksian Rose (*Idem*).—You may take it up carefully with as many roots as you can secure, in the beginning of March, cut in the head pretty severely, but not too much, plant it in a flat basket, such as those in which nurserymen pack plants, and place it under glass or in some other warm situation, where it may remain until its future position is ready for it. Its top can be tied up to a stake for the time being, and in that condition it will sustain no injury for some weeks. If its future destination be against a wall, let the collar of the plant be near one side of the basket, so that, if necessary, when it is planted the basket may be buried with it, or at all events that the bottom of the basket may remain if the sides be cut away.

Forcing-house Temperature (*W. J. N.*).—We are well pleased at your success in the forcing of flowers in a "continuous temperature of 70°," which is as high if not higher than that required for any tropical plant we know at this season. We do not recommend a continuous temperature of 70° in the forcing of Roses, Cinerarias, Primulas, Pelargoniums, Hyacinths, and Narcissus, because we find it positively injurious, and we can grow them much finer and have a longer continuance of bloom by having a considerably less temperature. Roses at no time require a higher temperature than from 55° to 60° at night; Cinerarias bloom in a temperature of from 50° to 55°; Primulas in one of 45° to 50°; Pelargoniums do well forced in a temperature of from 50° to 55°, and Hyacinths and Narcissus in one of 50°. All will last longer in bloom if the above temperatures be reduced 5° when the plants come into bloom. On these temperatures you may allow a rise of 5° by day in dull weather, and one of from 10° to 15° with sun and air. With such a temperature as you name you will find the bloom poor, and the plants will become very leggy, and be spoiled for future forcing, which, however, is not of any great moment, as they are seldom used for that purpose in two consecutive years. What you can want with a continuous temperature of 70° for bedding plants we are at a loss to know, unless you wish to force for cuttings, when a heat of 50° would serve your purpose much better. As for Strawberries in such a temperature, we should expect them to prove blind. We anticipate that your plants will soon be attacked by insects, and become drawn, unsightly objects if such a temperature be continued. We would advise it to be lowered 10° within ten days, and 10° in ten days more, or reduce it to 50° at night, which will grow well all the plants you name. Remove the bedding plants as soon as possible after hardening them well to a more suitable temperature.

Flora Londinensis (*A Cockney Gardener*).—You have been misinformed. The book bearing that name was written by Mr Curtis, and is a botanical work in two folio volumes. If you wish to cultivate flowers in-doors, "Window Gardening for the Many" will suit you. You can have it free by post from our office if you enclose ten postage stamps with your address.

Primula Seed (*Mrs. Hendrick*).—You had better write to Mr. Dean, Seedsman, Ealing, London, W.

Zonale Pelargonium Leaves (*J. H. H.*).—They are very inferior in variety and brilliancy of colours to those of many others now so common.

Sorghum tartaricum (*E. B.*).—There is no species so named, and any one attending to suggestions from the same source will be deluded.

Piping for Vinery—Produce of Vines (*H. W.*).—To force a lean-to vinery, 80 feet long, 12 feet wide, and 18 feet high at the back, and 4 feet in front, would require four four-inch pipes to begin, say in February; but for earlier work you would require at least one more. 2, This piping would be most effective if spread over the floor of the house—say four flows and one return. If that were unsuitable, then the next best plan would be to have them all on a level near the front of the house. The pipes will tell more if on the level than if piled above each other. If such a house were in two or three divisions, then the best plan would be to take a flow and return all the length, and take from these the necessary pipes for each division. 3, The best fuel is the best coal, banked up at night with ashes and cinders. This will be the cheapest, too, if there is no waste; but of course all extra heat will be waste, and hence, when depending on others, it is as well to use inferior coal; but a little coal, cinders, and coke, make economical fuel. There will be no difficulty in your man regulating the heat at night when he is used to the furnace and the boiler, and knows how to spply the damper. There would be no occasion for leaving air on now at night; but after the Vines are set a very little at the top would be advisable. 4, A moderate crop would be from 10 lbs. to 12 or 15 lbs. for each Vine of the thirty, if in good order. The depth of the roots will be unfavourable to early forcing. Deep as they are, we would rather keep the frost out of the ground.

Fowls' Dung as a Manure (*A Constant Reader*).—It is one of the most powerful fertilisers. Vines require neither that nor any other stimulating manure. Fowls' dung is much more fitted for making liquid manure for some plants, or as food for Asparagus and other kitchen garden crops.

Apple-tree Branches Sawn off (*A. B.*).—Not only should the edges of the bark be smoothly cut with a sharp knife, but the whole face of the wound should be covered with melted pitch to exclude wet.

Vines in a Vinery (*Constant Reader*).—We approve of Vines being planted inside for several reasons often given, and one of them is, the securing the stems from vermin, for many a fine Vine we have had destroyed by the nibblings of mice and rats; but in your case we decidedly would plant outside, and take the Vines in either above or below the wall-plate, doing it in the latter mode if you do not contemplate taking the Vines out of the house. In such a case, if any of the stems of the Vines outside are not covered, it is best to place the three sides of a wooden box against each Vine, with the wall for a fourth side, and a lid fastened on, so that neither rats nor mice, neither frost nor wet, can reach them, and then with your old sashes for the border you may grow and force them exceedingly well. In your case we would be perfectly satisfied with such a good outside border.

Protecting Rhododendrons (*Amateur*).—For your protecting belt we would recommend a mixture of common Laurels, Lilacs, Philadelphus, and Ribes, with a front of the Rhododendron ponticum, which would come in well with the groups of finer Rhododendrons.

Pincushion-beds (*Idem*).—The centering of the pincushion-beds with a fine plant of Bijou Pelargonium would improve them if they harmonised well. They would suit well with Viola cornuta.

Alkaline Manures for Potatoes (*D., of Headcorn*).—I did not try them for two reasons:—Firstly, I wrote about them and failed to get a reply; secondly, I did not see the cogency of the reasoning which recommended them. I found certain Potatoes in my garden close and waxy, which others said were mealy; but others were all that could be desired. I could not understand that my ground was in fault, for then I should have thought all would have shared alike: hence I did not try the alkalies.—D., *Deal*.

Select Delphiniums (——).—Three good double Delphiniums:—Alepecuroides, Triomphe de Pontoise, Madame Henri Jacotot. Three good single Delphiniums:—Bicolor grandiflorum, Hendersonii, Belladonna.

Names of Plants (*J. D. M.*).—Your Conifer is Thuja occidentalis. (*G. A.*).—We cannot name plants from mere leaves. We ought to have flowers sent to us. (*M. P. D.*).—Excœcaria discolor. (*Mrs. T. F.*).—Nerine pulchella, a native of South Africa. (*A. R. T.*).—1, Helichrysum vestitum; 2, Phœnocoma prolifera. (*Sophia*).—Lastrea dilatata. (*W. S.*).—Specimens insufficient. (*W. J.*)—The pod you received as "Calvary Clover" is a Medicago; but we cannot identify the species from the fragment sent. (*An Old Subscriber*).—The specimens you enclosed are the catkins of the common Alder. They, as well as the leaves and bark, have for ages been used by the Highlanders and others for dying black.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending February 5th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 30	29.859	29.581	51	34	46	46	S.W.	.47	Overcast; cloudy; heavy rain.
Thurs. 31	29.122	29.985	45	32	46	43	W.	.10	Fine; very clear; overcast; rain at night.
Fri. .. 1	30.062	30.031	48	40	45	43	S.W.	.00	Hazy; drizzly and foggy; overcast.
Sat. .. 2	30.413	30.176	48	25	46	43	W.	.00	Fine; exceedingly fine throughout.
Sun... 3	30.457	30.195	50	29	45	43	S.	.01	Clear and frosty; very fine; overcast at night.
Mon... 4	29.700	29.482	51	32	45	43	S.W.	.08	Densely clouded; very boisterous and wet; fine at night.
Tues.. 5	29 417	29.014	50	33	45	43	S.	.14	Fine; rain; boisterous; hurricane in the night.
Mean	30.004	29.780	49.00	32.14	45.43	43.43	..	0.80	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE EFFECTS OF THE SEASON.

Most poultry yards are in arrears. Broody hens are hard to find, eggs are scarce, and there are no chickens yet. It is wonderful how people who ought to know better rail at their fowls if after forty-eight hours they have not shaken off the effects of a month's frost and begun laying. It has been an unusually trying season for poultry; not only has the earth been bound as it were with iron, not only has water been in many places unattainable, not only have combs and toes been frozen, but the fowls have had to eat snow with all their food, and to drink it when melted. This last lays the foundation of many diseases. Snow is a violent purgative to all birds. The good, fat, matronly Wild Duck, with her ample rounded hows, rises and falls on the lake as the little waves heave, happy that she has avoided in her new home the extreme weather that drove her from the north; but the snow comes. Three days are sufficient to make her sharp as the sharpest that ever crossed the Atlantic. The Lark that fattens on two days' rime of the white frost, becomes a "bag of bones" after two days' snow. Partridges suffer, and so do fowls. They cannot lay till they have repaired and replaced that which they lost. As soon as the bones are well covered with flesh, there is something to spare to go to internal formations.

There are few in the present day who do not keep more than one breed. Some are in confinement, and these have less opportunity than the others of obtaining necessaries. They have only that which is given to them, and the most lavish provision that can be made falls far short of that which is necessary, or which nature demands. Nothing expensive is demanded or necessary. Follow nature as closely as you can. If your fowls are shut up where they have no green food, cut large sods of growing grass, let lots of earth adhere to it, and you will not only see them eat the grass and great part of the mould, but they will roll and dust themselves in the powdered earth that remains after the shaking. Have the bottoms of the pens dug up, and left as rough and uneven as possible, scatter some whole corn, and you will see with pleasure how your birds delight in it, and how they find all sorts of good things while seeking the scattered grains. It is not the piling up of food, nor the throwing down of sacks of corn, that constitutes profitable feeding. Attentions like these make combs red, and fill the egg-basket.

RESULTS OF POULTRY-KEEPING.

In accordance with your request, I send you the summary of my poultry journal for the past year.

I have two houses for my poultry, one built against a warm flue for winter accommodation, and one considerably cooler and better ventilated for the summer months. The fowls have a field of about two acres to ramble in, besides a small plantation. I feed them twice a-day, in the morning at 8.30 with wheat, barley, or oats; and in the evening at 4.30, with a warm meal of boiled potatoes and fine middlings. I have another advantage which I think highly conducive to their health—viz., a stream of pure water.

I do not know that anything extraordinary has happened in my yard, except that a Cochin hen laid two eggs in one day on two separate occasions. The first time she laid both the day before and the day after the feat; on the second occasion she missed the day after. I have also had several eggs weighing 4¼ and 4¾ ozs. I have had very little disease in my yard during the past year, and this I attribute to careful feeding, cleanliness, and the use of the solution of sulphate of iron in

water; for rearing chickens and keeping adult fowls in good condition, it is excellent. For fowls which are drooping and have black combs, and all the other signs of impaired digestion, the receipt which you were kind enough to give me is very good—viz., a teaspoonful of whiskey, and a few meals of soft food afterwards.

My stock consists of two Cochin hens, twelve Silver-pencilled Hamburghs and cock. I have only put down the mere necessary expenses, such as food, &c., and not those attendant upon exhibiting, and, on the other hand, I have reckoned the sale of eggs and chickens at the common market price.

1866.	Eggs.	1866.	Eggs.
January	55	August	166
February	124	September	63
March	245	October	0
April	320	November	0
May	315	December	52
June	252		
July	170	Total	1772

Chickens hatched	56
Chickens reared	53

	£	s.	d.
Expenses	6	16	11¼
Receipts	11	0	0¼
Profit	4	3	1

—Spanish.

BRAHMA POOTRAS AT BRISTOL SHOW.

The rejoinder of "Y. B. A. Z." last week, to my complaint respecting his criticism on my pen of Brahmas, is of such a character that I cannot pass it by in silence.

I will take the personal matter first. Of his unnoticed single cock he says that I admired him exceedingly a few weeks before the Show, and would gladly have purchased him, also preferring his cocks generally to those of Mr. Boyle. This he implies is grossly inconsistent with my remark, that by his peculiar hobby he has to a great extent ruined his yard. He, of course, thought it still more so, that I should (as I innocently did the day after my complaint appeared), apply to him for a hen, I need scarcely now add without success. No experienced breeder, however, who knows how to use the "points" in any particular yard, would think the remark and the fact at all incongruous; and even casual readers would have seen no inconsistency had he added, as in strict fairness he should have done, that my expressed desire for this bird and preference of some of his cocks to Mr. Boyle's, were grounded specially and solely upon the clearness and sharp marking of the wing, for which I consider his strain to be remarkable, and which I wished to import into the other. I have still a note from him referring to "the experiment" I wished to try, which is a very different thing to selecting the bird for exhibition. He ought, also, to have added, that I did at the time, if my memory serves me, refer to the small amount of vulture hock in the cock in question as a decided fault in an otherwise good bird. I may add for myself, what is well known to "Y. B. A. Z.," that although I have no wish to see vulture hocks expressly authorised, I so far agree with him that I should like to see a small amount of it *tolerated*, for the sake of the heavy leg-feathering it tends to produce. The conversation he refers to took place early in November, some weeks before either of the two great shows of last year, and when, "from information I received," I had some reason to hope such might be the case; but the result of the judging at both the Shows referred to quite convinced me the question was *settled* for two or three years at least, and birds I would formerly have bred from, I should on that account now reject. I will only observe further on this point, that in alluding to this particular cock my object was very obviously not to decry him as a bad bird, but simply to point out, that whilst criticising a near neighbour's winning pen, his own exhibition "standard of excellence" did not seem to find favour with the Judges.

So, also, in speaking of "ruin" in his yard, I, of course, meant simply, that to persistently and avowedly *cultivate* what Judges reject must render a large portion of stock useless for exhibition, and unadvisable for breeding-purposes. I do not see how this can be denied; but it does not follow there are not still plenty of birds free from the defect, and the amount of "ruin" wrought in any strain crossed from such a yard will obviously depend entirely upon the amount of judgment shown in the selection. "Two or three years back," when the satisfactory cross he refers to took place, the vulture-hock controversy had not reached its present point. With these explanatory remarks, I have no reason whatever to doubt his assertion that the gentleman referred to, whom he afterwards mentions by name, and who is confessedly the most eminent exhibitor of Dark Brahmas in the three kingdoms, owes his success to him. To what extent his yard was crossed from that of "Y. B. A. Z." I have no means of knowing; but all Brahma breeders will feel grateful to have pointed out to them the sure highway to such marked success, and it heightens my regret that my own application for just one single hen should have met with a curt refusal.

"This is sorter ironnicle," as Artemus Ward says; but I will add seriously, that I much regret having been led into any remarks on a neighbour's fowls. It may be and is quite true, that "Y. B. A. Z." brought it upon himself fairly by a wholesale depreciation of my own birds, which I felt the more as coming from one so near, whose judgment would weigh with neighbouring fanciers, as I have already cause to believe has been the case. Still I regret having followed his example, and need scarcely say that my reason for doing so was not to retaliate, but only to show that the standard to which he breeds his own birds was little likely to make him a fair judge of mine.

I shall add little more, as "defence, not defiance," is my only object. A casual *mention* of Messrs. Hewitt and Douglas as "eminent judges," can hardly be called "praising" them, which I had no thought of doing; but since he has mentioned them again, I will just remark, that Mr. Douglas is himself a successful breeder of Brahmas and knows their points well, whilst he is reputed to look rather sharply after good feathering; and of Mr. Hewitt there is a general opinion amongst those who have most studied his decisions, that he has, if anything, rather a special weakness for good combs.

In conclusion, had "Y. B. A. Z." made it clear that he simply called my birds "poorly feathered" from his own vulture-hocked point of view, or even as compared with Mr. Boyle's single cock mentioned by him, I should never have complained. The latter cock was certainly much heavier-feathered, and I think for his age was altogether the very best bird I ever saw; and if all that do not come up to his standard of feathering are to be called "poorly feathered," it will go hard with Mr. Boyle himself. "Y. B. A. Z." made the sweeping and absolute assertion that my pen was "coarse in the combs and poorly feathered," and the standard of comparison he furnished was the second-prize pen, which he said "was better," and, therefore, he *did* certainly "virtually question" the decision of the Judges. I have never yet said my pen was *heavily* feathered, nor am I going to discuss the merits of the really splendid second-prize pen; but I say as a matter of simple fact, that be their *general* merits greater or less, their leg-feathering was not one whit heavier than my own, and that both were good. I agree with "Y. B. A. Z.," that the class as a whole was very inferior; but I consider being placed before even one pen of such real merit no mean triumph, which I cannot submit to have criticised away, even by such fearful-looking initials as those adopted by my Persian Mentor.
—L. Wright, *Southwell Street, Kingsdown, Bristol.*

[Here this controversy must cease. We are quite sure that neither of our correspondents intended either to depreciate the other's fowls, or to annoy their owner.—Eds.]

JEDBURGH EXHIBITION OF POULTRY AND PIGEONS.

The Show held at Jedburgh on the 30th and 31st of January was the ninth annual meeting that has taken place under the management of the Jedburgh Committee, a body of gentlemen who are evidently quite alive to the necessities of a show, and who, knowing how matters should be carried out, use every possible exertion to do all things properly. This season they had quite a complication of drawbacks to encounter. First, the date of their meeting was encroached upon by half a dozen other shows; and, again, a far greater difficulty arose from the almost unparallelled severity of weather that for many weeks had snow-bound the whole district. Their Show, however, proceeded, and the result was a far better meeting than the most sanguine of the Committee anticipated. The Corn Exchange, in which the Exhibition was held, was most artistically decorated with evergreens and a variety of artificial flowers. Taking into consideration the late severe weather the number of empty pens was very small. We could not help observing, however, that many otherwise most praiseworthy pens were suffering severely from frost-bite. This, strange to say, was especially evident in the Dorking classes, even far more than in the Spanish fowls, usually considered so much more tender.

The *Spanish* were exceedingly good, as were also the *Dorkings*, but spurs outside the legs were of frequent occurrence. In selecting the breeding stock for the coming season it would be well for all owners to

eschew altogether such birds as possess this malformation, as it is almost invariably transmitted to the progeny. In *Cochins* the Buffs were as a whole the best of any. The *Brahmas* did not show to advantage. There were many very excellent *Game* fowls shown; among them was one that for several years past "always took the first prize." His ever doing so again is now quite impossible, for when fighting at a show with his next neighbour, unfortunately he broke away completely the upper mandible of his bill, so that his only utility for the future will be as a stock bird. It is a great pity that such an accident should have happened to so good a bird, but neither lapso of time nor any application whatever can restore the injured bill sufficiently for exhibition. In *Hamburghs* the Show was very good, although it might be almost called Mr. Beldon's Show of Hamburghs, for this gentleman secured, in spite of a really good competition, first and second prizes in all four varieties. Some marvellously good *Polands* were also shown from the same yard, both Silver-spangled and Black. There was likewise a very fair collection of *Game Bantams*, but the late frosts had evidently caused much deterioration in not a few of these tiny birds.

The Ayleshury were decidedly better than the Rouen *Ducks*, and the Extra variety class for Ducks was peculiarly good. It embraced Mandarins, Carolinas, Shell Ducks, Wigeons, Pintails, and many other breeds. From Mr. Jennison's fine birds being detained on the railway, as the Committee were informed by a telegram, this class was reserved unjudged until past five o'clock in the afternoon, yet they did not arrive in time to receive the honours they so well deserved, as it was imperative to get out the catalogue for the opening time in the morning. The *Turkeys* and *Geese* were quite equal to those exhibited even at our largest shows, and the competition was generally severe. This was a singular feature when it is remembered that the carriage of these weighty birds to so remote a district would cause a considerable outlay to exhibitors. The Selling classes, as usual now-a-days, were well filled, and great numbers of pens changed hands. It is worthy of remark that selling classes were first introduced to public favour by the Jedburgh Committee a few years ago. The *Pigeons* and *Canaries* proved a very interesting collection, and almost invariably these birds were shown in excellent feather. With the general attention displayed by the Committee, no doubt the Jedburgh Exhibition will annually increase both in entries and importance.

SPANISH.—First, H. Beldon, Goit-stock, Bingley, Yorkshire. Second, A. Redpath, Edinburgh. Third, B. Murdie, Jedburgh. *Chickens.*—First, H. Beldon. Second, A. Redpath. Third, J. Anderson, Friarshall, Melrose. Commended, R. Ballantine, Hawick; D. Geilatly, Meigle, Perthshire.

DORKINGS (Coloured).—First and Third, Lord Binning, Mellerstain. Second, H. Beldon.

DORKINGS (Silver).—First, J. Smith, Breeder Hill's, Grantham. Second, Lady Baird, Newbyth, Haddington. Third, J. Hardie, Corbie. Commended, W. Cheyne, Selkirk.

DORKINGS (Coloured or Silver).—*Chickens.*—First, J. Carror, Comieston, Lothianburn. Second, Lord Binning. Third, J. Hardie. Highly Commended, T. Raines, Stirling. Commended, Countess de Flahault, Tullyallan Castle; T. L. Jackson, Bush Ewes. *Pullets.*—First and Third, Countess de Flahault. Second, J. Hardie. Commended, Lord Binning; T. Raines.

COCHIN-CHINA (Any variety).—First, Miss Nelson, Eaglesfield, Dumfries. Second, E. A. Aglionby, Esthwaite Lodge, Hawkshead (Partridge). Third, J. Stuart, Thistle Bank, Helensburgh (Buff). Highly Commended, Mrs. Ford, Hardengreen, Dalkeith (White); W. R. Park, Abbotsmeadow, Melrose (Buff). *Chickens.*—First, E. A. Aglionby (Buff). Second, W. R. Park White). Third, Mrs. Ford (White). Highly Commended, H. Beldon; J. Stuart (Buff); J. Barton, Jedburgh (Buff). Commended, C. Pease, Darlington (Buff).

BRAHMA POOTRA.—First, C. Pease. Second, J. Muirhead, Salton Mains. Third, J. Waugh, Castlehill, Lochmaben. *Chickens.*—First, Capt. Fisher, Albyn Place, Aberdeen. Second, E. A. Aglionby. Third, Mrs. Craw, Jedburgh.

GAME (Black or Brown Red).—First, J. Brough, Carlisle. Second, Lord Binning (Black-breasted). Third, J. Hardie (Black Red).

GAME (Any other variety).—First Withheld. Second, W. Easton, Jedburgh (Duckwings). Third, F. L. Roy, jun., Nenthorn (Duckwings). *Chickens.*—First, J. Smith (Brown Red). Second, J. Brough, Carlisle (Black Red). Third, W. Riddell, Selkirk (Brown Red.)

HAMBURGHS (Silver-spangled).—First, H. Beldon. Second, W. France, Crieff. Third, J. Bowe, Carlisle. Highly Commended, H. Beldon. Commended, F. L. Roy, jun.; Mrs. Craw, Jedburgh.

HAMBURGHS (Silver-pencilled).—First and Second, H. Beldon. Third, T. J. Harrison, Singleton Park, Westmoreland. Commended, G. Walker, Selkirk.

HAMBURGHS (Golden-spangled).—First, H. Beldon. Second, R. Dickson, Selkirk. Third, J. Turnbull, Selkirk. Commended, T. Musgrove, Longtown.

HAMBURGHS (Golden-pencilled).—First and Second, H. Beldon. Third, R. Burrow, Longtown. Commended, D. Normand, Kennoway, Fife; W. R. Park.

BANTAMS (Any variety).—First, W. Mabon, jun., Jedburgh (Black Red). Second, G. Young, Sprouston (Duckwing Game). Third, W. Dixon, Sunderland (Black Red). Extra Third, D. Broomfield, Kelso (Game). Highly Commended, R. Youll, Sunderland (Black Red); J. Sword, Jedburgh (Duckwing); J. Kerr, Sprouston (Duckwing Game); W. Easton, Jedburgh (Brown Red). Commended, G. Turnbull, Kirriemuir (Black Red); W. Hodgson, Darlington (Game); F. L. Roy, jun. (Black Red); E. A. Aglionby (Pile Game),

BANTAMS (Any other variety).—First, J. R. Jessop, Beverley Road, Hull. Second, F. L. Royd, jun. (Silver Sebright). Third, J. Barton, Jedburgh (Black). Commended, F. L. Roy, jun. (Black).

ANY OTHER VARIETY.—First, Countess de Flahault (La Flèche). Second, W. R. Park (Crève Cœur). Third, H. Beldon (Polands). Highly Commended, H. Beldon (Polands); Countess de Flahault (La Flèche); J. A. S. E. Fair (White Dorkings). Commended, W. E. Otto, Jerdonfield.

GEESE (Any variety).—First, Miss Swan, Bush (Toulouse). Second, T. E. Boog, Lanton (Toulouse). Third, Mrs. Sanderson, Magdalenhall (Chinese).

DUCKS (White Aylesbury).—First and Second, J. A. S. E. Fair, Gillicstonques. Third, E. Leech, Rochdale. Highly Commended, — Finlay, Jedburgh; Messrs. Swan & Hood, Bush. Commended, J. Steel, Kelso.

DUCKS (Rouen).—First, J. H. Frame, Overton. Second, J. Hardie. Third, J. Gray, Sharplaw. Highly Commended, J. Hall, Broombaulks. Commended, Mrs. Craw.

DUCKS (Any other distinct breed).—First, T. C. Harrison (Mandarins). Second, J. R. Jessop. Third, H. Beldon (Call Ducks). Commended, J. Slater, Eccles (Wild Ducks).

TURKEYS.—*Poults.*—First, J. Smith. Second, Lord Binning. Third, E. Leech, Rochdale. Highly Commended, T. L. Jackson.

SWEEPSTAKES FOR BANTAMS.—First, G. Turnbull, Kirriemuir (Black Red Game). Second, W. Brown, Selkirk (Black Red Game). Third, J. Renilson, Selkirk (Black Red Game). Highly Commended, J. Park, Jedburgh (Black Red). Commended, G. Young, Sprouston (Duckwing Game); J. Scott, Selkirk (Black Red Game); J. Lunn, Glenburnhall (Duckwing); F. L. Roy, jun. (Black Red).

SELLING CLASS.—First, T. L. Jackson (Turkeys). Second, W. Paterson, Langholm (Spanish). Third, G. Macmillan (Manorkies). Highly Commended, T. L. Jackson (Dorkings); Mrs. Birkett, Penrith (Dorkings); J. Hardie (Dorkings); Mrs. Craw (Cochin China, Brahma Pootra); J. A. S. E. Fair (Aylesbury Ducks). Commended, R. Scott (Aylesbury Ducks); Messrs. Swan & Hood, Bush (Aylesbury Ducks); Miss Swan, Bush (Turkeys).

COTTAGERS' PRIZES.—First, A. Stevenson, Cessford (Game). Second, R. Sword. Third, G. Macmillan (Silver-spangled Hamburghs). Highly Commended, A. Stevenson (Game). Commended, W. Sinton, Selkirk (Brahma Pootra); W. E. Miller, Selkirk (Silver Dorkings).

SINGLE COCKS.

DORKINGS.—First, J. H. Frame, Overton. Second, J. Hardie. Third, Countess de Flahault.

GAME.—First, J. Hardie. Second, H. M. Julian, Hull. Third, J. Brough.

HAMBURGHS.—First, H. Beldon. Second, J. U. Somner, Jedburgh. Third, T. E. Boog. Highly Commended, H. Beldon. Commended, F. L. Roy.

PIGEONS.

TUMBLERS (Almond).—First, J. Bell, Newcastle. Second, P. A. Renwick, Kelso. Third, R. Thomson, Moresdalehall, Kendal.

TUMBLERS (Any other variety).—First, F. D. Wood, Edinburgh. Second, J. Fielding, Rochdale. Third, H. Yardley, Birmingham. Highly Commended, J. E Spence, Millhill, Musselburgh (Short-faced); J Campbell, Distillery, Langholm (Short-faced); J. Bell, Newcastle (Kites).

FANTAILS.—First, J. Grant, Corstorphine. Second, J. Bell, Newcastle. Third, Highly Commended, and Commended, W. R Park.

POUTERS.—First and Third, J. Grant. Second, F. Keir.

NUNS.—First, R. Paterson. Second, W. Scoon, Melrose. Third, R. Davidson, Jedburgh. Highly Commended, H. Yardley.

OWLS.—First and Second, J. Fielding. Third, F. D. Wood, Edinburgh. Highly Commended, T Spence, Millhill; W. R. Park.

TURBITS.—First, R. Paterson. Second, H. Yardley. Third, R. Thomson. Highly Commended, F. D. Wood; R. Thomson. Commended, R. Davidson.

JACOBINS.—First, P. A. Renwick. Second, F. D. Wood. Third, Countess de Flahault. Highly Commended, R. Thomson; F. D. Sanderson.

ANY VARIETY.—First, J. Campbell (Magpies). Second, H. Yardley. Third, Mrs. Craw (Dragons). Highly Commended, Countess de Flahault (Runts); Mrs. Craw (Victoria); G. Bell. Commended, F. D. Wood, Edinburgh (Swallows, Trumpeters); A. Goodfellow.

SELLING CLASS.—First, A. Anderson, Edgerston (Barbs). Second, J. Grant, Corstorphine. Third, R. Davidson (White Dragons). Highly Commended, J. R. Jessop (Owls); H. Yardley; J. Barton, Jedburgh (Baldhead). Commended, A. Ormiston (Jacobins).

CANARIES.

SCOTCH FANCY (Yellow).—*Cock.*—First, J. Blackie, Jedburgh. Second, J Dalgleish, Galashiels. Highly Commended, J. Bell, Jedburgh. Commended, R. Ballantyne, Hawick. *Hen.*—First, J Kemp, Galashiels. Second, W. Tinline. Highly Commended, A. Ferguson. Commended, T. Scott.

SCOTCH FANCY (Buff).—*Cock.*—First, J. Kemp. Second, G. Laidlaw. Highly Commended, R. Ballantyne. Commended, G. Bennet. *Hen.*—First, A. Ferguson. Second, J. Hope. Highly Commended, T. Scott. Commended, R. Swanston, Jedburgh.

BELGIAN FANCY (Yellow).—*Cock.*—First, J. Barton. Second, J. Marshall, Galashiels. Highly Commended, J. Cleghorn. Commended, J. Hope. *Hen.*—First, J. Kemp. Second, W. Tinline. Highly Commended, J. Barton. Commended, J. Kemp.

BELGIAN FANCY (Buff).—*Cock.*—First, J. Kemp. Second, G. Laidlaw. Highly Commended, G. Laidlaw. Commended, J. Dryden, Kelso. *Hen.*—First, W. Tinline. Second, J. Cleghorn. Highly Commended, J. Dryden. Commended, J. Kemp.

FLECKED CANARIES (Yellow).—*Cock.*—First, G. Walker, Kelso. Second, J. Cleghorn. Highly Commended, Mrs. Craw. Commended, G. Mabon. *Hen.*—First, G. Park. Second, G. Walker. Highly Commended, J. Hardie. Commended, G. Mahon.

FLECKED CANARIES (Buff).—*Cock.*—First, W. Laidlaw. Second, G. Walker. Highly Commended, G. Macmillan. Commended, W. Finlay. *Hen.*—First, W. Tinline. Second, W. Finlay. Highly Commended, J. Hall, Jedburgh. Commended, G. Park.

JUDGES.—*Poultry:* E. Hewitt, Esq., Sparkbrook, Birmingham; *Pigeons:* J. H. Frame, Esq., Overton, Carluke; *Canaries:* Mr Dewar, Edinburgh.

HALIFAX WINTER POULTRY SHOW.

THE second Show of this Society was held on the 2nd inst. in the Temperance Hall, Northgate. This building is ill adapted to the purpose of a show of such dimensions, for some parts are so badly lighted that it would be next to impossible to know a Black from a Golden-spangled bird at first sight; and in addition to this evil the space is so limited that the pens had to be put in double tiers, and so close to each other were the rows, that two persons were inconvenienced

to pass between them at one time. Arrangements would doubtless have been made for a more suitable building if the great increase of entries had been at all anticipated; for last year 114 included Canaries, while this year's schedule, for poultry and Rabbits alone, brought nearly 170 pens. The great difficulty of judging a show with such disadvantages will be easily perceived, and many expressed themselves surprised that any one would accept such a task. The Committee, whose care of the birds entrusted to their hands was most exemplary, will doubtless endeavour to secure more extensive accommodation for their future shows, seeing the very handsome manner in which they have been supported by exhibitors. The Show was well attended, especially in the latter part of the day, which would doubtless act beneficially on the spirits of the overworked Secretary.

Red *Game* were first in the list, and a magnificent pen of Brown Red chickens in this class won the cup for the best pen of Game in the Show. The second prize was awarded to a pen containing a very handsome Black Red cock, but the hen mated with him showed more pencilling on the wing than was desirable. In the Variety class for Game Mr. Firth's well-known Duckwing chickens were first, the second prize going to a capital pen of old birds from Beverley. The *Spanish* classes were good. The splendid old birds of Messrs. Burch & Boulter were first; the second and third prizes went to two pens of handsome chickens. The *Cochin* class was not good, crooked tails and twisted combs being the rule. Of *Brahma Pootras* there were several very good pens; Col. Stuart Wortley's pen of young birds beating Mr. Pickles's celebrated old pen, which looked sickly and out of condition. Spangled *Hamburghs* were very good, but, except the first-prize pen, the pencilled Hamburghs were bad. *Game Bantams* were a very large class, the first and second prizes being awarded to two beautiful pens of Duckwings, the third to a smart little pen of Black Reds. Bantams, any other variety, had some nice pens, the first-prize pen of Whites being of great beauty and striking appearance, Laced and Black following second and third. A capital pen of Silver *Polands* was awarded first for any other variety not previously named, and carried off the cup for the best pen of poultry in the Show, Game excepted; very closely pressed, however, by Mr. Preston's pen of Silver Polands, the comparative rarity of the former only deciding in their favour.

The class for Lop-eared Rabbits was large, having twenty-five entries. The medal for the best pen was given to Mr. Newsome's Blue buck, which out-distanced all competition. The next in excellence was a capital Black doe from Sheffield. One of the best Rabbits in this class was disqualified, owing to a large blemish over its left eye. Himalayas were as pretty as ever, and well worthy the attention bestowed on them; and the prize-winners in Angoras were like balls of swan's down.

A capital Black Red Game chicken was shown in the Extra stock class by the Secretary, though not for competition.

GAME (Black-breasted).—Cup, E. Akroyd, Bradford. Second, T. Bottomley, Shelf, near Halifax. Third, R. Pashley, Worksop. Highly Commended, J. Gelderd, Colliu Croft; R. Pashley; J. Crossland, jun. Commended, A. Fenton, Crimble Hall, Rochdale; J. Hodgson, Bradford.

GAME (Any other variety).—First, J. Firth, Halifax. Second, W. Boves, Beverley. Third, A. Fenton. Highly Commended, A. Hodgson, Illingworth, near Halifax; T. Sunderland, Halifax.

SPANISH (Black).—First, Messrs. Burch & Boulter, Sheffield. Second, J. Preston, Allerton, near Bradford. Third, J. Marchant, Halifax Highly Commended, J. Thresh, Bradford; W. McMellon, Glossop. Commended, J. Newton, Silsden, near Leeds; W. Roberts, jun., Halifax.

COCHIN-CHINA.—First, J Oates, Stoney Royde, Halifax. Second, H. Crossley, Broomfield, Halifax. Third, C. E Ridsdale, Copely, near Halifax. Highly Commended, J. Wade, Copely Mills, near Halifax; T. Rogers, St. Helens, Lancashire. Commended, C. E. Ridsdale.

BRAHMA POOTRA.—First, Col. Stuart Wortley, Grove End Road, London. Second, J. H. Pickles. Third, J. Smithson, Lightcliffe, near Halifax. Highly Commended, Rev. W. J. Mellor, Colwick Rectory, Nottingham; J. H. Pickles; J. Smithson. Commended, M. Brookshank, Manchester.

HAMBURGHS (Gold or Silver-spangled).—First, J. Ogden, Hollingwood, near Manchester. Second, J. Preston. Third, H. Firth, Dudley Hill, near Bradford. Highly Commended, Messrs. S. & R. Ashton, Mottram, near Manchester; H. Jennings, Allerton near Bradford. Commended, W. Bairstow, Fearnecliffe.

HAMBURGHS (Gold or Silver-pencilled).—First, J. Preston. Second, H. Pickles, jun., Earby, near Skipton. Third, F. Pittis, jun., Newport, I.W. Highly Commended, H. Greenwood, Woodhall Hills, near Leeds; T. Briggs, Fearnecliffe, Bingley.

GAME BANTAMS.—First, J. Crossland, jun Second, F. Pittis, jun. Third, G. Noble, Staincliffe, Batley. Highly Commended, Rev. W. J. Mellor; F. L. Roy, Nenthorn, Kelso; A. Fenton; J. Crossland, jun.

BANTAMS (Any other variety).—First, J. R. Jessop, Hull. Second, Messrs. S. & R Ashton (Laced). Third, H. Draycott, Humberstone, Leicester (Black). Highly Commended, J. Walker, Halifax (Laced); F. L. Roy (Laced).

ANY OTHER VARIETY NOT PREVIOUSLY MENTIONED.—Cup and First, J. Colston, Sowerby Bridge (Silver-spangled Polands). Second, Col. Stuart Wortley (French Fowls). Third, S. T. Beaumont, Hudderafield (Dorkings). Highly Commended, S. T. Beaumont (Polands). Commended, Messrs. Walton & Widdop, Booth Town (Dorkings); Col. Stuart Wortley (Silkies); M. Brookshank, Manchester (Dorkings).

EXTRA STOCK.—Very Highly Commended, T. Dyson, Halifax (Game). Highly Commended, C. E. Ridsdale, Copley (Cochin-China); W. Walker (Black Spanish). Commended, W. H. Green (Game Bantams).

RABBITS.

SPANISH.—Medal, W. Newsome, Leeds (Lop-eared). Second, W. Allison, Sheffield (Black Doe). Highly Commended, S. A. Willie, East Moulsey, Surrey (Sooty Fawn Buck); J. Warden, Halifax (Smut Buck); W. Newsome (Lop-eared); W. Allison (Grey Buck); C Gravil, jun., Thorne, near Doncaster (Doe and Buck). Commended, J. Warden (Grey Doe and Buck).

HIMALAYAN.—First, H. Cawood, Thorne, near Doncaster. Second, F. Horsfall, M.D, Carlton Grange, near Pontefract. Highly Commended, J. R. Jessop, Beverley Road, Hull; J. Alderson, Claremount, Halifax; C. Rayson, York Mount, Prestwich. Commended, T. Hawkes, York; J. Shaw, Mount Pleasant, Halifax.

ANGORA.—First, J. Alderson. Second, A. Parry, Rochdale. Highly Commended, C. Rayson. Commended, M. Huntsworth, Halifax; J. Shaw.

JUDGE.—Mr. E. Hutton, Pudsey, Leeds.

NEWCASTLE-UPON-TYNE ORNITHOLOGICAL ASSOCIATION.

THIS Society held their first annual Exhibition of Canaries and Pigeons in a room of the Half Moon Inn, Bigg Market, on the 25th and 26th ult.

The Pigeon pens were constructed of deals with wire fronts; 112 pens were shown, including the selling class. We fear the Society will be losers, as too little notice was given of the Exhibition; besides, the room was not a suitable place for the purpose.

There was a good show of *Canaries*, which were ranged down the centre of the room, and the *Pigeons* round the walls.

Carriers mustered four pens, and were poor, except the first prize pair, which were a first-class hen and a fair cock. Pouters, with the exception of the winning pens, were also poor. Almond Tumblers were a good class. Mr. F. Key received high commendations for a capitally matched pen, which certainly ought to have been second. Short-faced Tumblers, of any other colour, were also good; but the first and second prizes should have been reversed. In Trumpeters, the first prize went to an excellent pair of Blacks, the second to equally good Mottles; but one of the latter birds was out of health, and unfit for exhibition. Nuns were not remarkable. The first and second Barbs were first-class, and would hold good positions at some of the best shows. The Fantail class was good, but the second-prize pair was not entitled to that position, there being four better pens exhibited. In Magpies, the second prize was given to a coarse pair of Blacks, a fine pair of the same colour receiving high commendation. The first prize went to a nice pair of Swallows. The first prize in Jacobins went to a moderate pair of Reds, one of the birds having a blemished eye. The best pair arrived too late for competition, but the class contained better competitors than the recipients of the prize. Both prizes were taken by Yellows in the class for Turbits, but the second-prize birds were coarse and large. Some fair Reds and Blues were shown. In the class for English Owls, some good birds competed, but the best pen was unnoticed. In the Variety class a pair of good Blue Swallows was first, Archangels second. The following is the list of prizes:—

CANARIES.

BELGIAN (Clear Yellow).—First, W. Gillson, Sumae Street. Second, H. Hall, Gateshead.

BELGIAN (Clear Buff).—First, J. Baxter, Newcastle. Second, W. Davidson, Newcastle. Very Highly Commended, J. Wilson, Scotswood Road, Newcastle.

BELGIAN (Variegated Yellow or Buff).—First, W. Gillson. Second, J. Wilson.

GLASGOW DON (Clear Yellow).—First, H. McDougdale, Edinburgh. Second, R. Forsyth, Edinburgh. Highly Commended, J. Forsyth, Elswick East Terrace.

GLASGOW DON (Clear Buff).—First, J. A. Currie. Second, J. Forsyth. Highly Commended, R. Forsyth.

GOLDFINCH MULE (Yellow).—First, R. Wardle, Gilesgate Moor. Second, J. Wynn, Northampton.

GOLDFINCH MULE (Buff).—First, R. Wardle. Second, G. Parkinson, Houghton-le-Spring. Very Highly Commended, R. Hawman, Middlesborough. Highly Commended, J. Wynn.

GOLDFINCH MULE (Dark).—Prize, T. Robinson.

LINNET MULE.—First, J. Baxter. Second, W. Blair, Earrington Colliery, Bedlington.

NORWICH (Clear Yellow).—First, J. Smart, Newcastle. Second and Very Highly Commended, G. Parkinson.

NORWICH (Clear Buff).—First, H. Yeld, East Sunderland. Second, J. Wynn. Very Highly Commended, G. Symington, Newcastle. Highly Commend, T. Johnson.

NORWICH (Variegated, or four Marked Yellow).—First, J. Spence, Bishopwearmouth, Sunderland. Second, R. Hele. Very Highly Commended, J. Baxter.

NORWICH (Variegated, or four Marked Buff).—First, J. Baxter. Second, J. Spence. Very Highly Commended, G. Parkinson.

LIZARD (Golden-spangled).—First, T. Robinson, Middlesborough. Second, W. Gillson.

LIZARD (Silver-spangled).—First and Second, T. Robinson.

DUN (Yellow Cinnamon).—First and Second, G. Moore, Northampton. Highly Commended, H. Yeld.

DUN (Buff Cinnamon).—First and Second, G. Moore.

DUN (Yellow marked).—First and Second, G. Wilkinson.

DUN (Buff-marked).—First, E. Baker. Second, G. Wilkinson.

CLEAR GREEN.—First, E. Baker. Second, M. Brown, High Felling, Gateshead. Very Highly Commended, H. Yeld; G. Atkinson, Gateshead; W. Davidson.

COMMON FOUR MARKED.—First, J. Baxter. Second, G. Wilkson. Very Highly Commended, R. Kipling, Forth Terrace; J. Baxter. Highly Commended, J. Carr.

GOLDFINCH.—First, R. Wardle. Second, G. Wilkinson. Very Highly Commended, G. Atkinson.

GROUP OF TEN CANARY BIRDS, OR UPWARDS, IN ONE CAGE, IRRESPECTIVE OF COLOUR.—First, J. Blakey, Bath Lane. Second, R. Daniels.

PIGEONS.

CARRIERS.—First, N. Stephenson. Second, T. Thompson, Wideopen. Highly Commended, T. C. Taylor, Middlesborough.

POUTERS.—First, C. Vaux, Sunderland. Second, J. E. Spence. Highly Commended, T. Thompson.

TUMBLERS (Short-faced Almond).—First, R. Daniels. Second, G. Fawdon, Pipewellgate. Highly Commended, F. Key, Beverley, Yorkshire; N. Stephenson.

TUMBLERS (Short-faced, any colour).—First, T. Rule. Second, G. Fawdon. Highly Commended, N. Stephenson.

TRUMPETERS.—First, R. Gray. Rabbit Banks. Second, C. Vaux. Very Highly Commended, R. Daniels.

NUNS.—First, C. Bulfin, Bridgewater, Somerset. Second, T. C. Taylor.

BARBS.—First, G. Fawdon. Second, C. Vaux. Highly Commended, R. Daniels.

FANTAILS.—First, G. Fawdon. Second, N. R. Parker, Melrose. Highly Commended, N. Stephenson.

MAGPIES.—First, C. Bulpin. Second, C. M. Byers, Seaton Sluice. Highly Commended, G. Fawdon.

JACOBINS.—First, C. Vaux. Second, P. A. Renwick. Highly Commended, J. G. Spence.

TUMBLERS.—First, P. Stephenson. Second, R. Daniels. Highly Commended, W. Youl; T. Rule.

TURBITS.—First, G. Fawdon. Second, J. Thompson. Highly Commended, W. B. Van Haanshergen.

ENGLISH OWLS.—First, R. Daniels. Second, P. Stevenson. Highly Commended, N. R. Parker.

ANY OTHER DISTINCT BREED.—First, G. M. Byers (Swallows). Second, R. Gray (Archangels). Highly Commended, T. C. Taylor.

JUDGES.—Mr. Robert L. Wallace; Mr. John Crawford, and Mr. Thomas Lowery.

SOUTH OF IRELAND POULTRY, PIGEON, AND CAGE BIRD ASSOCIATION.

THE sixth annual Exhibition of Poultry, Pigeons, and Song Birds, was held in the Athenæum, Cork, on the 30th and 31st of January.

The following prizes were awarded:—

SPANISH.—First, J. C. Cooper, Cooper's Hill, Limerick. Second, H. L. Tivy. Highly Commended, Mrs. Dring, Rockgrove; Mrs. Hay. *Chickens.* First, R. P. Williams, Clontarf. Second, J. C. Cooper. Highly Commended, Mrs. Dring; F. Y. Gilbert (White Spanish; A. E. Allen, Cork.

DORKINGS (Coloured).—First, R. P. Williams. Second, J. C. Perry, Browning's Town, Cork. *Chickens.*—First, Mrs. Dring. Second, Mrs. Webb. Highly Commended, R. P. Williams. Commended, Mrs. Dring; J. C. Cooper; T. O'Grady, Roughgrove, Bandon; F. W. Zurhorst, Belville, Donnybrook.

DORKINGS (Silver-Grey).—First, T. O'Grady. Second, Rev. J. O'Sullivan. *Chickens.*—First, T. O'Grady. Second, J. C. Cooper. Highly Commended, R. P. Williams; F. Hodder. Commended, Rev. J. O'Sullivan; T. O'Grady.

DORKINGS (White).—First, J. C. Perry. Second, Countess of Bandon.

COCHIN-CHINA (Buff or Lemon).—First, R. P. Williams. Second and Highly Commended, Mrs. Hay.

COCHIN-CHINA (Partridge or Grouse).—First, Mrs. Webb. Second, J. C. Cooper.

COCHIN-CHINA (White).—First, F. W. Zurhorst. Second, Miss L. Pike.

BRAHMA POOTRAS.—First and Second, R. W. Boyle, Bray, Co. Wicklow. Highly Commended, J. C. Cooper; Miss J. B. Haughton.

CRÈVE CŒURS.—First and Highly Commended, J. C. Cooper. Second, J. C. Perry.

GAME (Black or Brown Reds).—First, C. F. Staunton, Clondalkin (Brown). Second, J. Lloyd (Black). *Chickens.*—First and Second, J. C. Cooper.

GAME (Duckwings, Piles, or others).—First and Commended, J. C. Perry. Second, A. E. Allen, Cork. *Chickens.*—First and Second, A. E. Allen (Piles and Greys).

POLANDS (White Crests).—First, R. P. Williams. Second, J. C. Perry.

POLANDS Spangled).—First, J. C. Cooper. Second and Commended, R. P. Williams (Silver and Gold).

HAMBURGHS (Pencilled).—First, F. W. Zurhorst (Gold). Second, Mrs. Dring (Gold). Commended, J. C. Perry (Gold).

HAMBURGHS (Spangled).—First, J. C. Cooper. Second, T. O'Grady. Highly Commended, J. C. Perry. Commended, R. P. Williams; Mrs. Dring.

BANTAMS (Sebright).—First, Hon. Mrs. H. B. Bernard. Second, R. P. Williams.

GAME BANTAMS.—First, T. O'Grady. Second and Highly Commended, W. D. Allen. Commended, J. Lloyd.

BANTAMS (Silky).—First and Second, J. A. Fitzpatrick. Commended, C. F. Staunton.

ANY OTHER VARIETY.—First, J. C. Cooper (Malay). Second, F. U. Zurhorst (Sultans). Extra Second, F. U. Zurhorst (French); J. C. Cooper (La Flèche). Highly Commended, F. Y. Gilbert (Houdan; Hon. Mrs. H. B. Bernard (Sultans). Commended, F. W. Pim (Houdan); J. C. Perry (Houdan); F. Y. Gilbert (Houdan); J. C. Cooper (Houdan and Malay).

TURKEYS.—First, J. C. Cooper. Second, Rev. J. O'Sullivan. *Poults.*—First and Second, J. C. Cooper.

GEESE (Coloured).—First and Second, J. C. Cooper.

GEESE (White).—First and Second, J. C. Cooper. Commended, J. C. Perry.

DUCKS (Aylesbury).—First, J. C. Cooper. Second, R. P. Williams. Commended, J. C. Perry. *Ducklings.*—First, Countess of Bandon. Second, R. P. Williams. Highly Commended, J. C. Cooper.

DUCKS (Rouen).—First, R. P. Williams. Second, Rev. J. O'Sullivan. Commended, J. C. Cooper. *Ducklings.*—First and Second, R. P. Williams.

DUCKS (Any other variety).—First and Commended, R. P. Williams (Shell Ducks and Buenos Ayrean). Second, Countess of Bandon (Carolina).

MRS. LYON'S MEDAL.—Medal, F. H. Zurhorst.

PIGEONS.

POUTERS (Yellow Pied).—First, A. W. Shaw, Limerick. Second, J. H. Perrott, Cork.

POUTERS (Black Pied).—First and Highly Commended, Dr. Harvey. Second and Commended, J. H. Perrott.

POUTERS (Blue or Silver Pied),—First, A. W. Shaw. Second, Dr. Harvey. Highly Commended, Dr. Harvey; J. H. Perrott. Commended, J. H. Perrott.

POUTERS (Red Pied, Mealy, or other Colour).—First, A. W. Shaw, Second, Dr. Harvey. Highly Commended, A. W. Shaw; D. Harvey. Commended, A. W. Shaw; Dr. Harvey; J. H. Perrott.

POUTERS (White).—First, Dr. Harvey. Second, J. H. Perrott. Highly Commended, A. W. Shaw. Commended, Dr. Harvey.

CARRIERS (Black).—First, Dr. Harvey. Second, A. W. Shaw. Highly Commended, Dr. Harvey. Commended, P. M'Carthy; Dr. Harvey.

CARRIERS (Dun).—First, Dr. Harvey. Second, A. W. Shaw.

CARRIERS (Blue or other colour).—First, R. Daly. Second, A. W. Shaw.

TUMBLERS (Short-faced Almonds).—First, Dr. Harvey. Second and Commended, A. W. Shaw.

TUMBLERS, KITES (Short-faced).—First and Second, A. W. Shaw.

TUMBLERS (Short-faced, Mottles, or others).—First and Second, A. W. Shaw (Mottles).

TUMBLERS (Short-faced, Balds, or Beards).—First, J. B. Blennerhassett. Second, R. A. Blennerhassett. Commended, A. W. Shaw.

TUMBLERS (Commons, Balds, or Beards).—First, J. B. Blennerhassett, Second, A. W. Shaw. Commended, J. B. Blennerhassett; A. W. Shaw.

TUMBLERS (Common, any other colour).—First, J. H. Perrott. Second A. W. Shaw.

BARBS (Black or Dun).—First, A. W. Shaw. Second, J. H. Perrott. Highly Commended, J. Lloyd. Commended, A. W. Shaw.

BARBS (Any other colour).—First and Second, J. H. Perrott (Yellow and Red). Highly Commended, A. W. Shaw (Yellow and White); G. Wherland. Commended, G. Wherland (Red and Yellow).

JACOBINS Red or Yellow).—First and Second, J. H. Perrott (Yellow). Highly Commended, A. W. Shaw (Red); J. Pike (Yellow). Commended, J. Lloyd Yellow); J. W. Edge (Yellow).

JACOBINS Any other colour).—First, A. W. Shaw (White). Second, J. H. Perrott (Mottled).

FANTAILS (White).—First, J. Pike. Second, A. W. Shaw. Highly Commended, T. O'Grady; J. H. Perrott; J. Pike.

FANTAILS (Any other colour).—First, J. W. Edge (Blue). Second, R. A. Blennerhassett. Highly Commended, J. W. Edge (Blue); J. Pike (Blue). Commended, J. Pike (Blue); J. Jefferies (Black)

OWLS (Blue or Silver).—First, J. Pike. Second, J. Jefferies. Highly Commended, J. H. Perrott. Commended, R. Russell.

OWLS (Any other colour).—First, A. W. Shaw (White). Second, J. W. Edge. Commended, J. Pike (Black).

TRUMPETERS (Mottled).—First and Second, J. H. Perrott. Commended, A. W. Shaw; J. H. Perrott.

TRUMPETERS (Any other colour).—First, A. W. Shaw (Black). Second, J. Pike. Highly Commended, J. F. Blennerhassett (Whites). Commended, T. O'Grady (White; A. W. Shaw (Whits).

TURBITS.—First, J. H. Perrott. Second, T. O'Grady. Highly Commended, J. B. Blennerhassett.

NUNS.—First, T. O'Grady. Second, C. F. Staunton.

MAGPIES.—First, T. O'Grady. Second, A. W. Shaw.

ANY OTHER VARIETY.—First, A. W. Shaw (German Toys). Second, J. Lloyd (Isabels). Highly Commended, J. Lloyd (Runts); Dr. Harvey (Pigmy Pouters Brunneas). Commended, A. W. Shaw (Frillbacks); Dr. Harvey (Isabels); J. H. Perrott.

SPECIAL PRIZE.—Society's Silver Medal, awarded to the exhibitor who wins the greatest number of points, A. W. Shaw.

SWEEPSTAKES FOR YOUNG PIGEONS.

POUTER (Any colour),—Prize, J. H. Perrott.

CARRIER (Black).—Prize, Dr. Harvey.

CARRIER (Dun).—Prize, Dr. Harvey.

TRUMPETERS (Any colour).—Silver Medal, J. H. Perrott.

SONG BIRDS.

CANARIES (Yellow without Crest).—First, Second, and Commended, Mrs. Hodder. Highly Commended, H. E. Bond.

CANARIES (Yellow with Crest).—Prize, H. E. Bond.

GREEN OR OTHER COLOUR.—First and Second, A. Veitch (Green Canary and Pied). Highly Commended and Commended, H. E. Bond (Harlequin and Lizard).

GOLDFINCH MULES.—First, J. Dowling, jun. Second, J. Fitzgerald. Highly Commended, W. P. Harris. Commended, Mrs. Hodder.

LINNET MULES.—Prize, W. P. Harris.

BLACKBIRDS.—Prize, Mrs. Hodder.

THRUSHES.—First and Highly Commended, J. Fitzgerald. Second, Mrs Hodder.

SKYLARKS.—First, Mrs. Hodder. Second, J. Perry.

BULLFINCHES.—Prize, J. Dowling, jun.

GOLDFINCHES.—First and Second, Mrs. Hodder. Highly Commended, T. Crowley. Commended, R. Russell.

LINNETS.—First and Highly Commended, R. Russell. Second, Mrs. Hodder.

SOCIETY'S MEDAL TO THE WINNER OF THE GREATEST NUMBER OF POINTS.—Mrs. Hodder.

WOODBURY HIVES.

UNDER the above heading at page 40, No. 302. of this Journal is a description of an "improvement" in the Woodbury hive, signed "C. F. George."

Any suggestions or improvements having for their object the facilitating the removal and interchange of bar frames in hives must, doubtless, be acceptable to all practical apiarians. Simplicity, however, should be the guiding rule in all improvements, whether intended to apply to things actually in existence or to those to be newly constructed. Mr. George states in his communication, "I have tried it, and it quite answered my expectation." Without in the least wishing to prejudice him, or in any way to detract from the ingenuity of his plan, I cannot but think that it is rather complicated. I would venture to inquire whether he has ever heard of the elongated top bar frames as first, I believe, introduced to public notice by "SIBERT-IN-THE-WOLD," in THE JOURNAL OF HORTICULTURE, No. 262, page 265, where it is fully described? It will be manifest from a perusal

of this article that the difficulty of loosening the frames when cemented by the bees is in a great measure obviated, and that the object can be effected without the necessity of thrusting the finger inside the hive. It was found, however, that the wooden notches which "SIBERT'S" bar frames rested in were liable to break in the process of moving the frames. Mr. Pettitt, of Snargate Street, Dover, has overcome this difficulty by the invention of a metallic-bar rest or rack for the reception of the ends of the elongated-bar frames, to which allusion is made by "SIBERT" at the conclusion of his communication above referred to, as also in an article signed "F. C. V." which immediately follows it.

The advantages of the metallic bars over the wooden notches are—1st, Their durability; 2nd, Their freedom from expansion or contraction from the effect of weather; 3rd, Their great simplicity and capability of adaptation to the Woodbury or Langstroth hives by the merest novice in the art of carpentering.

The elongated top bar has been ingeniously made applicable by Mr. Pettitt to existing Woodbury and Langstroth frames, and can be fixed to or removed from them as occasion may require by the most simple means. Thus, the interchange of combs between hives of the original and altered construction (required in the process of forming artificial swarms), is not frustrated.

The Sibert-Pettitt, if I may so term it, plan will be found to embrace, and with more simplicity, all that Mr. George appears to desire, with one exception—viz., "the frames can be gently pushed one towards another without lifting up." The force of this remark I cannot comprehend, inasmuch as the object of opening a bar-frame hive is the inspection of the combs. How is this to be performed without lifting the frames out?—X.

BEES CLUSTERING—MOVING HIVES.

I HAVE two common hives of bees in a bee-sbed, which does not answer, as the bees cluster in numbers within it during the summer without swarming. I wish to have the front taken out, and on its completion place the shed and hive 5 yards further back, and to the left of the original position the same distance. Can this be done with safety to the bees, and should the bees be moved gradually, a yard or so at a time, or at once? They will have to be put on common stands whilst the shed is altered.—INDUSTRIA.

[Bees often cluster outside their hives without swarming, whether kept in a bee-house or left exposed. The true remedy is either to super the stocks or form artificial swarms as may best suit your views. The stocks had better remain on the old spot until the season is sufficiently advanced to set them fairly at work, then move them very gradually—say a foot or so once a-week, until they reach the desired position.]

OUR LETTER BOX.

POULTRY SHOW AT BURY ST. EDMUNDS.—We are happy to inform our readers poultry will be exhibited at the Royal Agricultural Society's Show at Bury St. Edmunds, in July next, and a liberal prize list will shortly be published.

POULTRY CHRONICLE (*Lady Barn*).—It ceased to be published as a separate periodical in 1855, and was incorporated with our Journal.

RICE FOR FOWLS (*D. S.*).—Rice is not good poultry food. It is too poor, and has a tendency to produce vermin. It may be given at times for a change, but only in hot weather, and when there is abundance of natural food to counteract its ill effects. The only way in which it could be dressed to make it good food would be to boil it with meat.

FROST-BITTEN COMBS (*Subscriber*).—We have many fowls with their combs frozen, but none with legs so affected. We believe some will lose their nails, but we have none crippled by it. There is no cure for the comb, the frozen part must die off, and we should tremble for the frosted legs.

TURKEYS FOR BREEDING (*W. G.*).—We advise you to buy birds of last spring, or, if you like, a cock of 1865 and hens of 1866. If, however, any one keeps a cock in your neighbourhood you need not buy one. You can borrow him for twenty-four hours, or hire him, or send your hens on a visit to him. That is all that is necessary, and is as effectual as if you had as many cocks as hens. There is much similarity between Turkeys and sheep in this respect.

COCHIN-CHINA COCK'S EYES (*W. J. N.*).—There is an eye sometimes, found in Cochins called the "Jerry" eye. It is not a sightless eye to appearance, but it is so in fact when the bird becomes middle-aged. The celebrated "Jerry," the property of Mr. Sturgeon, handed down this only fault and his many virtues to his posterity.

VARIETIES OF COMBS (*M. L. A.*).—A *rose comb* is a double one full of points, like that of the Hamburgh. A *pea comb* is as it were made up of three single combs pressed into one, that in the centre being the highest, and having on each side the impression or projecting outline of the comb united to it by pressure. The *cup comb* is upright and single in front, it then divides; each side bows out in the centre and unites at the back, forming a cup. This comb is serrated all round. A hen will hatch Goose's eggs, but she does not cover many.

WORN-OUT SPANISH FOWLS (*J. E. S*).—The Spanish cock, seven years old, was worn out; the falling off of circulation, indicated by his discoloured comb, was a proof of it. We have no doubt he had a fat liver. This will often accompany a state of body in which the blood fills only one function—that of depositing fat. We have seen a young fowl almost bloodless, but so fat as to cause a cessation of all useful operations of the body. It was a Cochin pullet, and she looked like a badly-jaundiced patient in the face. We killed her by cutting her throat, but could draw only a few drops of thick blood. Had she lived a little longer these would have been absorbed, and she would have died from want of blood. We have never seen young Spanish die in this way, but they have diseases of their own. They are not long-lived, none of the non-sitters are, and few of the egg-producers reach the age of three without more or less of disease in the different organs having to do with the formation and laying of eggs.

EGG-PRODUCING FOWLS (*J. D*).—Brahmas, Cochins, and Houdans are the best layers. They are also very hardy. For a hundred fowls to do well you should have an acre and a half or two acres of ground. At present their food would cost you 25*s.* per week. Later, when there is natural food to be had, they would cost one-third less. You can keep them in a smaller place, but the above would ensure you greater success.

CROSS-BREEDING FOWLS (*Needy Subscriber*).—We do not approve of the cross between Brahmas and Houdans, because the latter are non-sitters. It is always bad policy to mate such with good sitters. Houdans are very hardy, they are capital layers, and will live as well in confinement as in an unlimited space. Dorkings want a large space. We think the cross you name between Brahmas and Dorkings will make you strong and good fowls, also excellent for table purposes. They will not be fit for the market at ten weeks; you must allow, even under favourable circumstances, six or eight weeks more. If you keep either Cochins, Brahmas, Spanish, or Houdans for eggs, they may be shut up in small places without detriment, and you will want your grass run for the hens and chickens. Till, however, the chickens are hatched the birds may run over it.

SCISSORS FOR DUBBING (*M. Y. Z.*).—You can buy them at any cutler's. The scissors used by grooms to clip horses answer very well for this purpose.

CATARRH IN FOWLS (*Gallus*).—Dry weather will be the best and almost the only remedy for the discharges from the nostrils. For many weeks we have had either rain or snow. The birds have lacked dust for baths and a dry surface for scratching. Continue the bread and ale and you will carry them on till they are cured by dry and perhaps sunshiny weather. We have never tried mustard, and cannot therefore give an opinion. We should not like to give much of it. We do not think there is any fear of crossing in the case you mention.

BRAHMA POOTRAS—BANTAMS (*Jem*).—There is no reason why a Brahma Pootra pullet running with a three-year-old cock should not produce good chickens. As you object to Game Bantams we recommend you to keep Gold-laced Sebrights.

TURKEY'S FACE SWOLLEN (*J. M.*).—It is certainly merely local, and neither hereditary nor infectious.

FOOD REQUIRED FOR FOWLS (*A. R.*).—The quantity varies with the season and the kind of fowl. Four pounds of barley-meal per week for each may be near the average. "The Poultry Book" contains directions for managing Ducks. (*M. L. A.*).—Your twenty-one fowls, besides the scraps you mention, should have five pints of meal and five pints of barley daily.

FOWL BREATHING WITH DIFFICULTY (*Lex*).—We believe that the symptoms you mention indicate catarrh, caused by the recent severe weather and subsequent rains. Generous food, with bread soaked in ale once daily, and confinement in a sheltered out-building, will be the best treatment. We consider roup contagious, and should remove entirely a fowl afflicted with it. Confining it in a pen in the fowl-house where the other fowls are we do not consider a sufficient separation.

PREPARING RUNTS FOR EXHIBITION (*Almost*).—Feed your Runts on good beans; they are believed to improve the colour and add to the gloss of the feather of Pigeons. Let them have a bath twice a-week, but not inside their house, as the floor will become wet and dirty, and the birds will soil their wings and tails. Of course you keep your loft scrupulously clean, removing all dung, &c., daily. We have blocks of wood, cut from limbs of elm, a foot across and a foot or so high, for the Pigeons to roost on. We place such a block in front of each two nests; then, the birds so roosting, the dung drops clear of them, and when the cock sweeps his tail on the pen it does not become dirty. If after the bath your light-coloured birds still look soiled, wash with soap and water, using a small sponge, and dry them in a basket littered with straw or hay by the fire. We recently wrapped up a washed bird in flannel to keep him warmer, and so that he should dry better, the weather being very cold. In Owls blue is the best colour, then silver, then any other. If black and white were equally well bred their value would be equal. It would be a mere difference of taste.

POUTER COCK ILL (*A Beginner*).—Separate your sick bird from the rest; put him in a clean dry pen where you can watch him; limit his supply of water; give him one grain of calomel three times a-week; then, if better, and if he be very thin of flesh, give a small dose of cod-liver oil once a-day. If you feel a lump of undigested food, cut open the crop, remove the lump, and neatly sew up the crop, having well cleaned it.

WORK ON BEES (*N. S. S.*).—A work such as you name was published once and failed. There are not enough readers. "Bee-keeping for the Many" may be had free by post from our office for five postage stamps. It was written by the late Mr. Payne, one of the best practical apiarians of our time, and has now many additions from former contributions to our columns.

LANARKSHIRE BEE-KEEPER.—The correspondent adopting this signature, answered in our last, was not "A LANARKSHIRE BEE-KEEPER" who occasionally contributes to our columns.

TOTAL MORTALITY IN A HIVE (*Mintlyn*).—It might have been better to leave the entrances unobstructed; but we believe it to have been just such an instance of "starvation in the midst of plenty" as was described by Mr. Woodbury in page 98.

REMOVING PAINT FROM AN AVIARY (*J. E. M.*).—Heat the paint strongly, and then it can be scraped off readily.

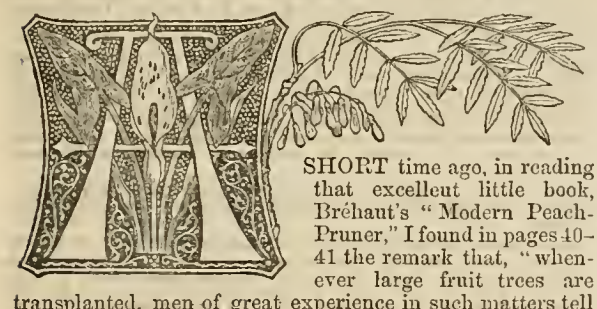
BOOK (*Old Beehive*).—"The Canary and Other Song Birds" contains all the information you seek. You can have it free by post from our office if you enclose twenty postage stamps with your address.

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 14—20, 1867.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
14	Th	Chimonanthus fragrans.	45.3	30.7	38.0	14	19 af 7	10 af 5	after.	24 af 3	10	14 29	45
15	F	Gnidia imberbis.	46.7	31.2	38.9	14	17 7	12 5	45 1	24 4	11	14 25	46
16	S	Hovea purpurea.	46.5	30.3	38.4	9	15 7	14 5	53 2	16 5	12	14 21	47
17	Sun	Septuagesima Sunday.	44.0	30.9	37.4	16	13 7	15 5	6 4	0 6	13	14 17	48
18	M	Pimelea decussata.	45.1	30.9	38.0	17	11 7	17 5	20 5	38 6	○	14 12	49
19	Tu	Arum crinitum.	44.7	30.9	37.8	15	9 7	19 5	33 6	10 7	15	14 7	50
20	W	Lily of the Valley.	45.1	30.3	37.7	20	7 7	21 5	45 7	39 7	16	14 0	51

From observations taken near London during the last forty years, the average day temperature of the week is 45.3°; and its night temperature 30.7°. The greatest heat was 59°, on the 16th, 1863; and the lowest cold 2°, on the 17th, 1855. The greatest fall of rain was 0.51 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

TRANSPLANTING LARGE FRUIT TREES.



A SHORT time ago, in reading that excellent little book, Bréhaut's "Modern Peach-Pruner," I found in pages 40–41 the remark that, "whenever large fruit trees are transplanted, men of great experience in such matters tell us that the success of the operation depends mainly on the quantity of earth removed with the roots." Now, what I ask is this: Is it possible in removing fruit trees, such as Peaches, Plums, Cherries, &c., to do so with any considerable quantity of soil at the roots? and, again, if possible, is it necessary to attempt it, if care is taken to preserve the roots without mutilating or injuring them?

About five years ago I was living in the gardens at Oakley Hall, in Hampshire; great alterations were going on at that time, and the mansion was nearly rebuilt; the offices belonging to it have been replaced by a grand south front, and close to this, instead of a pond and lumber-yard, there is now a beautiful flower garden. About 80 yards from the south front stood the kitchen garden, and it was thought necessary to do away with it altogether, and turn it into the pleasure grounds. The place selected for the new garden was a meadow, about 300 yards westward, and the materials of the old walls were to be employed in building the walls for the new garden. Accordingly, about May or June, 1861, we began unnailing the trees, and tying them to stakes as far back as possible, to save them from being injured in taking the wall away. In the following October the new walls were so far completed, and the borders prepared to receive the trees. Mr. Robins, the late head gardener, intended planting all the trees from the old garden. They were large, fine trees, and I remember Mr. Robins telling me he found the Peach trees planted when he first went to Oakley Hall, about fifteen years previously; but as the borders had not been properly prepared, he had had the trees taken up, the borders made, and the trees replanted. They were then young, and I should fancy, by the appearance of the Plums and Cherries, they must have been all of about the same age.

In making the border great care had been taken to secure good drainage, and a firm bottom; a good layer of stones, about 8 feet square, with coal ashes on the top, was the foundation for each of the trees, which were then planted in good loam.

We began removing the trees by opening a trench, 2 feet wide, at 5 feet from the stem, till we came to the foundation; with steel forks we kept working the soil from the roots, taking great care to avoid injuring these in any way. The soil crumbled away from the roots as we gently ran the forks in, and we kept an open trench by throwing it out with shovels; it was in splendid condition, neither wet nor dry, caused, I suppose, by the good drainage beneath. As fast as we came to the roots we laid them up gently out of the way until we had traced them all out; then, one man taking the stem on his shoulders, and two or three supporting the branches, every tree, with the exception of the Pear trees, was taken to the new garden, the roots laid in the soil, spread out regularly, and a thin layer of leaf mould placed over them. The roots were all on one level, no tiers, and so evenly were they laid out that they might have been trained on the wall with as great regularity as the branches. Three very large Apricots were moved in the same way; one, I should imagine, was upwards of thirty years old.

The Pear trees were larger, and most of them of such size that men could not conveniently carry them, so we drew some of them to their destinations on low trucks. The old borders for the Pear trees had not been prepared in the same way as for the Peach trees; the soil was a rather retentive loam, and the roots had penetrated to various depths. Two years previous to the removal of the trees Mr. Robins had given them a good root-pruning, and where each root had been pruned there was a mass of small fibrous roots.

All I have to add is that out of all the trees (from sixty to seventy, I believe), not one failed, or looked in the least the worse for the transplanting. Most of them, with the exception of Apricots, bore fine crops of fruit in the first season. In this case, had we tried to have taken the trees up with soil we should have found it next to impossible. I daresay Mr. Robins could state the exact age and all particulars, as he had the sole management of them, I being then a youngster under him.—T. P. I.

VINE-GROWING.

In these remarks I do not intend to take up a position superior to those who have already stated their opinions, and to arrogate to myself the tone of a judge who has heard the counsel for both sides, and proceeds to sum up for the jury, but only to put on paper what I have for years been in the habit of doing for my own benefit—first reading with care what appears in your pages, and then making a comparison between what I then read and what has gone before, or, what is the same thing in the end, any other information I may have on the same subject; and I hope if my deductions are made in error some one else will explain to me where I go wrong.

In the first place, then, I consider the letters written on this subject are intended for one or other of two classes, and that this is the main reason why Mr. Wills and "A Gardener" on the one side differ from "H. S." and "Vitis" on the other. I call the system Mr. Wills advocates the "show system," where cost, commercially speaking, is not thought of, in the desire that when his bunches do come he will be able successfully to compete for the prizes at the London shows with even Mr. Meredith himself; whereas "H. S." and "Vitis" would, I think, be satisfied with a commercial success if they never took a London prize. By this term commercial success I mean a success equal

to the cost incurred; and as I am of their way of thinking I do with pleasure join in this discussion, which I hope may end in adding to our information, notwithstanding that we may each be of the same opinion still.

I do not wish from these remarks that Mr. Wills should think that, in classing him with those who advocate what I call "the show system" of Vine-growing, I intend to say that he for his own selfish reasons would put his employer to a greater expense than is required to supply his table with Grapes; but I am of opinion that the majority of the gardeners who lay-out gentlemen's gardens do not study this part of the question, but think it would be beneath them to produce a bunch that was not extra first-class, and they go to greater expense than is required in the hope that they can realise this. Now, I think the point in discussion is what part of such outlay is warranted, that extra care on the gardener's part will not replace; and I think that Mr. Wills, judging by what he says, would rather not run risks for the sake of saving the cost.

Having read Mr. Wills's paper, I turned to my geological map for the explanation of what he says of Bishop Stortford, that "there was no merit due to Mr. Nash or his gardener; the soil was there ready, and they could not help growing good Grapes." I find that that place is on the border land between chalk and London clay; will he explain at length what he means? Does London clay only want chalk added to make it so fertile? I simply do not think that the soil Vines are planted in is of such paramount importance, and that it could not under any circumstances reduce the gardener's care to a minor consideration. Of borders inside *versus* borders inside and out, I think the mere fact of there being an outside border attached to a vinery in which first-class Grapes have been grown should not be accepted as a proof of the advantages of outside borders; and I am sorry, as Mr. Wills was at Garston during the growing season, that he does not tell us that he examined these borders both in and out over their whole surface, and found everywhere feeding roots, as this could have been done without causing the Vines any injury. Mr. Wills complains of the Lancashire climate, yet he also tells us that Mr. Meredith does not protect these borders, but leaves them exposed to this adverse influence, notwithstanding that they are so important to his success. I must, therefore, retain my opinion for the present, that as the number of roots a Vine can support depends on the quantity of foliage that Vine has, any one who, after completing his inside border and getting it filled with good healthy roots, straightway proceeds by putting an outside border to his Vines, to encourage them to send out roots into this outside border, kills the roots that are in the inside border in direct proportion to his success in inducing them to go into the outside border; and that the only good reason for doing so in ordinary situations is to provide a means of supporting the Vines while he changes the soil in the inside border, that this, at times, important operation may be done at the least possible risk to the Vines. It is now some years since I visited the Garston Vineyard, and I have no recollection of these outside borders, nor do I see that Mr. Wills gives us their width and depth.

Mr. Wills speaks of obtaining 5*s.* a-pound for his Grapes, but I think he will not find in his climate that an outside border will assist him in the two periods when this price can be obtained, either very early or very late. He has hardly yet arrived at the full knowledge of how long-drawn-out a spring can be, and I hope when he sighs in your pages for sunny Cheshire he may be spared the taunts I once received; he is not now near Delamere Forest, or that cream of all Cheshire land, the valley of the Dee, but on the cold side of Pendle Hill, and I should think on the clays of the coal measures. The full extent of what this means cannot be told.

Let me now turn to the account of Vine-growing in the open air at Bury St. Edmunds that has lately been published elsewhere, as it leads me on to the last part of the remarks I wish to make on this subject, of which "H. S." speaks. Mr. Thomson can treat of the temperature required far better than I can, and as "H. S." has called upon him by name, I shall confine myself to the question of what is a "mean temperature," and try to arrive at the answer by induction. We gardeners should be very thankful to the kind meteorologists who compile the tables, and confer upon them what they for the most part look for as a reward for their trouble—the satisfaction of doing something useful. I can only impute to this desire the trouble they take in calculating out "mean temperatures;" and, while I acknowledge their claim as public benefactors, I cannot help thinking that when these alone are given, anything more likely to mislead could not be invented. "H. S." gives us as his idea of Vine-temperature the 45th degree of north latitude, with a mean temperature of from 70° to 73°. Let me, then, take France with these conditions. As far as I am informed the island of Madeira forms the only exception of a wine-producing country that is not in some sort limestone; in France the vineyards are either upon the chalk, greensand, or oolite, as that at Bury St. Edmunds is on the chalk. The Vines are cultivated on hill sides upon terraces, which are formed by bringing down the soil at intervals, thus exposing the rock, or a rough wall built up to support the next terrace, to the full sun heat. At Bury St. Edmunds we are told the "shelter is perfect," "dry," "the Vines are planted against a wall 22 feet high," and "behind which rises a hill 90 feet high," that, on a November day, with a brisk wind blowing, "the thermometer stood at 76° in the sun," and "that in summer it often reaches from 80° to 90° in the shade and 130° in the sun;" and then the writer finishes by telling us that "the mean temperature is 50°." Question, If 50° give 130°, what will 73° give? No, I will not calculate that out; I will try again, and take the return of the Astronomer Royal for the month of June, 1866: mean of the month 62.6°; maximum in rays of sun 131.5°. Now, if 62.6° give 131.5°, what will 73° give? Is it 153.3?—a fancy calculation if you like, but one that carries with it more than a modicum of truth. I have given the mean as 62.6°, and the maximum in the rays of the sun at 131.5°; the maximum in the shade was 86.5°; but I should, to make a true calculation, take the mean of the year, as "H. S." does, and not the mean of the hottest month; though, till I know what the heat in the sun is in these countries, I hesitate to give it as a fact that they have 153.3° in the sun. The mean temperature for the year in London will be nearly the same as at Bury St. Edmunds, and may be taken at 50°, and we may also accept his estimate of 130° as correct, corroborated, as this shows it to be, by the return of the Astronomer Royal.—G. H.

CULTIVATION OF THE CAMELLIA.

The following is a brief outline of my experience in Camellia culture, and it tends to prove that Mr. Pearson's system of cultivating that shrub is the best.

Having during the last two or three years, at stated times, received from Mr. Pearson about fifty Camellias of various sizes, I knew that they had been grown in the compost he recommended in your Journal of February 27th, 1866—namely, turf thinly cut from a sandy loam used when fresh. Several gardeners in my neighbourhood saw these plants on their arrival from Nottingham, all of whom testified to their remarkably healthy appearance.

Following up Mr. Pearson's mode of treatment, about the end of February, 1865, I repotted about twenty young Camellias and a few old ones, that had been out of health, in the compost above mentioned. The result was, that both young and old plants grew most vigorously.

In the succeeding February I repotted about twenty-five or thirty Camellias, including large and small plants, in the same compost, using it rougher for the larger plants. For the latter the turf was pulled by hand into pieces about 1½ inch square, and for the smaller plants pieces about half that size were used. In potting I press the turf well down, and finish off with half an inch of finely sifted loam, which gives an even surface. The turf I employed was cut from a sandy loamy pasture that had not been broken up for a number of years; it was only 2 inches thick, and was used a few days after it was cut.

After potting, the plants were placed in a Peach-house from which frost was merely excluded, and where they have remained ever since. They were kept clean more by sponging the leaves than by syringing. The progress they made under this treatment was readily perceptible; they made strong shoots, some of which were 1 foot in length, with magnificent dark foliage such as has astonished both the nurserymen and gardeners who have seen them, and they have afforded me a succession of splendid blooms since October. Two well-known gardeners in this neighbourhood came here a week ago on purpose to see these plants, and said that they had never seen anything to equal the blooms for size, substance, and brilliancy of colour.

I may here state, that I have for the last two years been a successful exhibitor of Camellia blooms at the St. George's Hall Shows, Liverpool.

As an instance of the effect of Mr. Pearson's compost on

Camellias, allow me to mention the remarkable growth which one small plant of the sort named Targioni rosea made in one year. I received it from Mr. Pearson last February, in a three-inch pot, with only one shoot from the graft, which was about 8 inches long. I immediately repotted it in a five-inch pot, using fresh turf pulled into small pieces with the hand, and now it has six fine shoots, averaging 6 inches in length, as well as three fine blooms.

I see at page 216 of the Journal, published on the 20th of last March, that Mr. Robson, in commenting on Mr. Pearson's article referred to at the beginning of this paper, is inclined to disagree with him about the soil he recommends, and goes on to say that he is "of opinion that the water a plant is fed with exercises as much influence on its well-doing as the soil it is grown in." Taking what has come under my own observation as a criterion to go by, I hope Mr. Robson will not think me presumptuous if I beg to differ from him, for I am of opinion that the time is approaching when such ingredients as peat soil, leaf mould, &c., as forming part of the compost considered essential for growing the Camellia to perfection, will be numbered among the things that were. I quite agree with Mr. Robson in his partiality for rain water; but I have watered Camellias with hard water which had remained in the tank for some time before being used, when rain water could not be procured, and the results I have above described have been obtained notwithstanding.

In conclusion, after my experience of nearly three years in Camellia-growing in turf soil, I feel quite convinced that I have witnessed a most signal proof of its superiority over any other system. I agree with "T. L. C." in what he says about soil for Camellias.

The dimensions of some of my Camellias, measured above the rim of the pot, are as follow:—

Bealii, 6½ feet by 5½.	Fra Arnoldo di Brescia, 5 ft. by 4.
Do. 5¾ feet by 4½.	Aulica, 3½ feet by 2½.
Mathotiana, 4½ feet by 3.	Countess of Orkney, 3½ ft. by 2½.

I am told that some of the above specimens are the best in England of their kind. They are dense compact plants, with branches growing down over the rims of the pots.

Having said so much about Camellias, another fact has come under my experience respecting greenhouse Azaleas, which I hope you will allow me to record. I have upwards of forty Azaleas, the majority of which are young plants, varying in size from 1½ foot by 1 foot to 3 feet by 2, although I have one or two 4½ feet by 3, measured above the rim of the pot. In June, 1865, they wanted repotting, and good turfy peat being a scarce commodity in this locality, I had recourse to turf cut about 2 inches thick from a loamy pasture, and which had lain in a heap exposed to the atmosphere for six months, adding a fair proportion of sharp silver sand. In this compost, then, I shifted my Azaleas. They were afterwards kept in a warm greenhouse and frequently syringed, and the amazing growth they made during that and the following season surprised not a few; there is likewise a decided improvement in the flowers they have since produced.

It is but fair to add that it is Mr. Pearson to whom I am chiefly indebted for my acknowledged success in the cultivation of the Camellia here; but I have not had the "wrinkle" about the Azalea from him, if "wrinkle" I may call it. I am aware that in some of the metropolitan nurseries they are in the habit of using something like one-half turfy loam in their compost for the Azalea, but I have never heard it recommended to use turf entirely. It is not, therefore, without some misgivings that I hazard the above startling assertion in the face of the entire gardening community. I may naturally expect that some Azalea grower who has had more experience than myself will come forward to confute what I have here advanced; if so, I must then endeavour to work up my writing powers in order to make an effort to stand the brunt of his attack single-handed, for I have had a plain practical proof of the utility of turf soil for Azalea culture.

The following is a list of some of the Azaleas and Camellias I grow here:—

AZALEAS.

Adolphi flore pleno.	Duke of Devonshire.
Barelayana.	Gledstanesii.
Broughtoni.	Purpurea magnifica.
Brilliant.	Præstantissima.
Criterion.	Prince Albert.
Delicatissima.	Roi Leopold.
Duchesse Adelaide de Nassau.	Smith's Grandis.
Danelsiana purpurea.	Stanleyana.
Dilecta.	Symmetry.

CAMELLIAS.

Amadryas di Cuzano.	Imbricata.
Aulica.	Jenny Lind (a beautiful variety).
Alexina.	Mahomet.
Bealii.	Mathotiana.
Countess of Orkney.	Marchioness of Exeter.
Comtesse Boutourlin.	Ochroleuca.
Cup of Beauty.	Queen of England.
Countess of Ellesmere.	Queen of Denmark.
Duc de Bretagne.	Roi Leopold.
Double White.	Rubini.
Donckelaarii.	Storyi.
Fimbriata.	Targioni.
Fra Arnoldo di Brescia.	Targioni rosea (fine variety).
General Dronot.	Teutonia.
Gutbriana.	Valtevaredo.
Herbertii.	

—R. Fleming, *Hopeton House, Seaforth.*

AN ORANGE-HOUSE IN JANUARY.

I had the unexpected pleasure, a few days since, of a look into a neighbour's house devoted to the culture of dessert Oranges. I have seen many conservatories gay with forced flowers in this month, but never anything in gardening more beautiful and interesting than this collection of Orange trees in full bearing, not only of fruit but flowers; the scene seemed so enlivening, so full of the sweet south, to which the agreeable temperature of 65° largely contributed.

The house, which is about 12 feet wide and span-roofed, is heated by eight four-inch hot-water pipes, four on each side. Two on each side are on the floor of the house, and covered with slates, so as to form a surface gently heated, on which the pots stand; and two on each side are above the surface, so that the air of the house can, when required, be thoroughly heated. The path is in the centre, and one border is filled with Tangierine Oranges mostly in pots; a few planted out grow with extraordinary vigour, but do not bear so freely while young as those in pots. The other border is filled with the sorts that bear large fruit, such as the Maltese Blood, St. Michael's, and others. The Tangierine Oranges, which commence to ripen in October, were nearly over, with the exception of a few which had been retarded by placing the trees in a cool house in November and part of December—this delicious little Orange, it seems, may be kept on the trees in great perfection for five months by retarding—but the large Oranges were in full perfection, and nothing in fruit culture could be imagined more beautiful than the bright evergreen trees from which their fruit, like golden globes, hung so gracefully, with here and there a tree in full bloom filling the air with fragrance.

So much for the intellectual treat; but there are doubtless many of your readers who would like to know something about the sensual—viz., whether these tempting golden fruit are as good to eat as pleasant to view. I will, therefore, endeavour to describe what I tasted. I must commence with that sort which, like the Ribston Pippin among our Apples, is unrivalled among home-grown Oranges—the Maltese Blood Orange; and thereby hangs a tale, for it is found that Oranges from the same tree vary in colour, some having their flesh red, and others pale, like common Oranges. In 1865, after the hot summer, the Maltese Oranges here were all Blood Oranges; but this season the fruit from the same trees have scarcely any trace of the deep red tinge, except a few fully exposed to the sun, which are veined with red. As to the flavour of those I partook of, it was really exquisite, and quite unlike that of the imported Maltese Oranges, which is rich and sweet, but flat; while the flavour of those I had the pleasure of plucking from the trees on this frosty January morning was not only rich and sweet, but brisk, and the flesh most agreeably crisp, with a fine aroma. I felt when tasting them that I had never eaten any Oranges more delicious, even when plucking them from trees growing in that to us enviable climate—perpetual summer.

My attention was next drawn to Tangierine Oranges, some of which were still in perfection. There are three or four varieties of this pretty little Orange, which is only good when fresh from the tree. Their aroma is so volatile, that within forty-eight hours after being gathered they are comparatively flat, like the imported fruit sold in the fruit-shops in London in December and January. Some of your readers who have visited Lisbon and Malta may, perhaps, remember those charming Orange bushes, so plentiful there, with small leaves and covered with fruit. In the Lisbon gardens they seldom attain a height above 6 feet. The Maltese variety, called in that island the Mandarin, seems more robust in its habit, and its fruit is larger and more compressed than its relative the true

Tangierine. One need not, however, talk of the true sort, for there are many varieties in existence differing slightly in the shape of their fruit and the habit of the trees.

I saw here what is called the true Mandarin Orange direct from China. In habit the trees are more erect than the Tangierine; their fruit is compressed and of the same size as that sort, but so acid as to be uneatable. The trees are most prolific, and are pretty objects, commencing to bear when only 9 inches in height. Tangierine Oranges, evidently seedling varieties, vary in shape. My neighbour thought those small and spherical in shape, with very smooth rinds, the most delicious. I tasted only those rather large and much compressed, such as I have bought in London as Mandarins, and found them full of rich juice, and the essential oil in their rinds so abundant as to spurt forth and perfume the air of the house.

The most remarkable variety of the Tangierine Orange has been received from the Azores. Its leaves are narrow and pointed; its habit more rigid and fastigiate than that of other varieties. Its fruit, nearly globular, is small, with a thin smooth rind, and its rich juice most abundant and refreshing. A fruit of this sort, divested of its rind, and taken whole into the mouth, is what the Romans would have called a gift from the gods, and Horace would have written a volume in its praise. This sort has doubtless been originated from seed in the Azores, and there are in all parts of the Orange-growing world varieties of this race, in some places called Mandarin, and in others Tangierine Oranges. There is no doubt about its being a race, for if thousands are raised from seed they all retain the habit of the type, and, like seedling Green Gage Plums, vary from stems covered with small leaves and thorns to others thornless, still with a strong family likeness.

After much tasting and a long discussion about Tangierines, we turned our attention to the Oranges called St. Michael's, many of which were growing on young trees not more than 18 inches and 2 feet in height. It did, indeed, look interesting to see these little fellows staggering under the weight of three or four large Oranges. Like the Tangierines the St. Michael's vary much in shape, size, and thickness of rind, and, as may be found in foreign Orange gardens, no two trees bear fruit exactly alike, unless they are under a careful grower, who plants grafted trees. In the course of time, when dessert Orange culture shall be an established luxury in England, the thin-rinded and sweetest sorts of St. Michael's will be carefully selected and cultivated. Those I partook of with my neighbour were full of juice, and crisp and rich, very unlike imported fruit. One of the finest varieties of this race is the Silver Orange, an oval fruit, not large, with a smooth pale rind, and with firm crisp flesh, remarkably full of juice, of a high flavour, and without pips. The Egg Orange, another variety of St. Michael's, is a large sort, of a very loose texture, sweet, and very juicy: this sort is a great bearer. The White Orange is also a very large fruit with pale flesh, very juicy and good, but not so rich as some of the above.

One of the most ornamental sorts of the St. Michael's is the Variegated Orange with white-edged leaves, bearing oval fruit, below the medium size, of a pale lemon colour striped with green. This sort retains its fine brisk flavour all through April, and when fully ripe is most delicious. In looking through the house I found fruit of the Sweet Lemon and Sweet Lime quite ripe; their flavour is sweet but flat, with a powerful aroma seemingly like musk. A very beautiful tree of a sort called the Prolific Orange was loaded with fruit, which was rather small, with a thick rind. This is a very late kind, and hangs through a great part of the summer. The tree is very ornamental, its fruit juicy, very sweet, and slightly bitter. Trees of the Bitelma and Embigero Oranges were in the house, and described as giving fruit of fine quality, but they were fruitless.

A curious fact connected with dessert Orange culture was mentioned by my friend: if in midwinter the trees with ripe fruit on them are exposed to a low temperature, the fruit to a great extent lose their juice; on the approach of warm weather, or if the trees be placed for a week or two in a high temperature, they recover it.

I confess that I could now realise the facts before me, I mean the tasting and trying so many kinds of Oranges gathered from trees growing in our own country; and I was told that many other kinds that have not yet borne fruit are likely to prove interesting.

The method of cultivation seems very simple; the four surface-pipes are alone used from May till October. Early in the last-named month the water in the four border-heating pipes is turned on and continued till the end of May. The extra heat in autumn and winter is required to ripen the fruit and bring on the blossoming time, which is in February, although many trees produce their flowers in December and January. A constant gentle artificial heat is required during summer, and stronger heat in winter, to keep the temperature as much as possible like that in which Oranges ripen perfectly in the open air. In winter, in the house I have been inspecting, the temperature varies from 45° and 50° by night to 70° in sunny days; in summer it often rises to 90° or 95°, even with abundance of air.

The scale, that great pest to Orange trees, is killed by using methylated spirits of wine, containing 4 ozs. of shell-lac to the gallon, now called by Act of Parliament "methylated finish." This is cheap, being sold wholesale at from 5s. to 6s. per gallon. It is perfectly innocuous, and a certain destroyer of scale. The black fungus on the leaves, which often appears in winter, is washed off with a sponge and warm water; and aphides, which in spring often infest the young shoots of Orange trees, are destroyed by tobacco smoke. On inquiring if bottom heat was absolutely necessary, and if four pipes arranged on each side of the house, as usual with forcing-houses, would answer the purpose, I learnt that Oranges would ripen well without it, but that constant artificial heat was required to make the climate of the proper ripening temperature.

I have been tempted to give you an account of all I have seen and learned about dessert Orange culture—1st, Because I was much delighted with all that I saw; 2nd, I do not remember that it has been treated of in your columns; and, 3rd, it seems to open a new and agreeable path of pleasure to those who love gardening.—Citrus.

ROYAL HORTICULTURAL SOCIETY.

ANNUAL GENERAL MEETING.

"There's life in the old dog yet!" shouted the stalwart Highlander from the bottom of the precipice over which he had been slung to recover his faithful hound; and "there's life in the old Society yet!" shouts many a stalwart horticulturist who has been waiting with patient anxiety the result of this last Anniversary Meeting. Who would have ventured to predict four years ago—yea, one year ago—that at the Annual Meeting of 1867 the Council would announce that by care and economy the expenditure of the Society had all but been met by the income? Let those who are constitutionally haunted with evil forebodings read attentively the Report of the Council which we this day reproduce in our columns, and consider if the time has not arrived when they may take courage and look cheerful. We can quite believe that is not an easy thing for some to do. The Society has been long in the state that everybody attempted to nurse it, though having no qualification for the office, and what with neglect during one part of its existence, and mismanagement during the other, it could not be otherwise than in the worst possible position. Those, therefore, who had an interest in its welfare had become accustomed to look upon it as a weakly-constitutioned body that was ever in imminent danger of falling; and hence they have suffered so long from chronic nervousness and anxiety, that one can easily imagine they will have some difficulty in realising the present favourable change in the condition of the Society.

We quite believe we have seen the worst. The direction has fallen into the hands of a Secretary who has a clear perception of the power and value of the respective sides of the ledger, and who is applying that faculty to work out the Society's regeneration. The first paragraph of the Report is reassuring, when it states that the income arising from Fellows' subscriptions is over £200 more than last year. Then the rent arising from letting space in the arcades is 80 per cent. more than was derived from the same source in 1865. The sales of garden produce from Chiswick are also much in advance of last year, and would certainly have been very much more had the fruit crop not been almost an entire failure.

The most perfect harmony pervaded the Meeting, and all who were present expressed themselves highly gratified by the improved aspect of affairs. There was only one circumstance which gave rise to a feeling of regret, and that was the conversation which took place in reference to the relation existing between the Society and the Committee of the International Horticultural Exhibition. So as fully to understand all the circumstances we must refer our readers to the report of the meeting, which will be found below. Sir Wentworth Dilke has clearly been under the impression that no such arrangement

as that referred to was made with the Council, and has acted with perfect consistency throughout; but the production at the Meeting of Mr. Wilson Saunders's memorandum made at the time the agreement is said to have been entered into, is so conclusive that we have no doubt but that a misunderstanding has existed on the matter; and the subject merely requires to be properly represented in the right quarter for an amicable settlement to be effected. It is much to be regretted that Sir Wentworth Dilke was not present at the Meeting, when he could have answered the statements that were then made.

The Annual General Meeting of the Royal Horticultural Society was held on Tuesday last, the 12th inst.—His Grace the Duke of Buccleuch, President of the Society, in the chair.

The Assistant Secretary (Capt. Cockerell), read the advertisement convening the meeting, and then the minutes of the last General Meeting, which were confirmed.

The President then requested Messrs. Fortune and Booth to act as Scrutineers of the Ballot for the election of Members of Council and Officers.

The Assistant Secretary then read the following Report:—

REPORT OF THE COUNCIL.

"1. Notwithstanding the monetary distress of the past year, the Council are able to report to the Fellows an increase in the amount of annual subscriptions. The sums paid by Fellows as subscriptions in 1865 amounted to £7975 1*s.* 1*d.*, and, as will be seen by the annexed statement of receipt and expenditure, their annual subscriptions rose to £8176 9*s.* 6*d.* in 1866.

"2. The rents for the arcade-lettings to horticultural implement makers have also increased more than 80 per cent. since the year 1865, and during the last twelve months £320 have been paid to the Society under this head, in addition to the sum of £149 17*s.* received for Her Majesty's Commissioners of 1851 for the stalls in the south-eastern arcade.

"3. The sales of garden produce from Chiswick for 1866 have likewise exceeded those of the previous year. In 1865 these sales brought in £650 3*s.* 8*d.*; in 1866 they amounted to £717 15*s.* 5*d.* But for the failure of a considerable portion of the fruit crops—a failure under which all gardens in and about London suffered—the receipts from this source would have been considerably greater.

"4. It will be seen, therefore, that in the sources of income least liable to fluctuation the Society has made decided progress; and although the receipts from exhibitions and for daily admissions have fallen considerably below the average, the Council are of opinion that the affairs of the Society, though requiring strict economy, are in an encouraging position, for these deficiencies are traceable to causes which have affected every undertaking, whilst the progress made can only be attributable to the increasing popularity of the Society, and to the daily increasing number of wealthy residents in the neighbourhood of the Gardens.

"5. The falling off in the receipts for exhibitions and admissions to the Gardens is in part also attributable to another cause, which will not probably be of frequent recurrence. Although a payment was made to the Society from the funds of the International Horticultural Exhibition—and this payment was equivalent to that which is generally cleared by the First Great Show of the Society, the place of which it took—it by no means represented the whole diminution which it occasioned, directly and indirectly, to the receipts of the Society. It was proposed, when this arrangement was made, that the International Exhibition should be open for four days only, but at the end of the four days its receipts fell so far short of the anticipations of its promoters, that they found it necessary to apply to the Council for an extension of the time for which the Gardens were granted. The Council, in the desire of saving from heavy loss those who had so liberally given their names as the guarantors of an undertaking devoted to the interests of horticulture, at once acceded to the request, and, from the serious financial failure which it threatened to become, the undertaking was converted into a brilliant success.

"6. A further deficiency in the receipts, as compared with those of 1865, was occasioned by the abolition of the cheap admissions, in compliance with the wish expressed by the Fellows at the last annual general meeting, and unfortunately the free admissions which were granted to the public in lieu of them, were not so successful as to induce the Council to repeat them. They were taken advantage of less by the classes for whom the boon was intended than by those whose presence in the Gardens the Council had no desire to encourage.

"7. It may be remembered by the Fellows that the library of the late Dr. Lindley was last year announced for sale, and a proposition was made that the Fellows of the Society should be invited to subscribe for its purchase. The Council, however, having been given to understand that its purchase was contemplated by the Committee of the International Exhibition, thought it needless to bring it before the Fellows. Pending a decision concerning the mode in which so desirable an object was to be attained, the Council decided to advance the money for it, and they have now reason to believe that a portion of the surplus from the International Exhibition will be applied to the formation of a horticultural library at South Kensington, commencing with the purchase of the Lindley Collection.

"8. In carrying out the scheme for the year's arrangements, the Council have reduced the expenditure wherever it could be done without impeding the effective working of the Society, and an analysis of the accounts put into the hands of the Fellows will show that the strictest economy has been exercised. The expenditure for the maintenance and improvement of Chiswick, and for assistance given by the scientific staff, will hereafter yield its due return in increased produce in the Garden and in reputation to the Society, whilst to have stopped the work which is being so ably carried on would have been very injurious to it. For full information on this head Fellows are referred to the annexed report of the Chiswick Board. In speaking of Chiswick Gardens, the Council think it right to call the attention of the Fellows to the fact, that Mr. Thompson has now for a period of forty-five years rendered very valuable services to the Society, the greater part of the time as the Superintendent of the fruit and vegetable department. His great age requires that he should now have some rest from his labours, and, pending the adoption of any ulterior measures that may be taken for his advantage, the Council propose to continue to pay him the full amount of his present salary, leaving it to himself to determine what he can best do to assist the Society.

"9. The Education scheme for gardeners is working with success. The examinations held this year have resulted in thirteen young men receiving certificates either for horticulture or fruit and vegetable culture. Five of these gardeners are employed at Chiswick, five at the Royal Gardens at Kew, and three were from private establishments. Of those who presented themselves for examination, three had previously obtained certificates or prizes from the Society of Arts, examining on behalf of the Royal Horticultural Society. Two also showed themselves worthy of election as Associates.

"10. In their arrangements for the present year the Council have been induced to try the experiment of extending the duration of the First Great Show to four days, and the principal exhibitors have promised their support in making the experiment a success. It is proposed to hold the greater part of the Exhibition in the Great Tent and in some additional canvas-covered spaces. The more delicate plants will be shown in the Conservatory.

"11. Relations have been entered into with the Royal Agricultural Society for holding an Autumnal Fruit and Flower Show in the provinces in connection with their annual Agricultural Show, and arrangements have been made with them for a conjoint Exhibition at Bury St. Edmunds in July next. The horticulturists of that place and of the adjoining counties have entered into the scheme with a degree of spirit which indicates that the guarantee from loss stipulated for by the Council as a condition of holding the Show is not likely to be called into requisition. In a very few weeks from the announcement of the Council's intention, the contributions to the guarantee fund amounted to double the sum named as necessary; and, in addition to the prizes offered by this Society, cups, &c., to the value of no less than £226, have been offered by towns, counties, flower societies, and private gentlemen. The Council confidently expect, therefore, that the Show at Bury will not only exercise a beneficial influence on horticulture, but that it will conduce also to the reputation of the Royal Horticultural Society.

"12. It was originally the intention of the Council to publish four numbers of the Journal annually, to be paid for by subscriptions from such Fellows as might wish to receive a copy of the work. The additional subscription did not, however, find sufficient favour with the Fellows to enable the Council to publish the Journal on this footing; and the Council, unwilling to give up a plan which appeared to them to be so important an aid to the objects of the Horticultural Society, have determined to do what is possible towards it by bringing out the numbers of the work at longer intervals, and supplying them at the expense of the Society to the whole of its members.

"13. These and other proposed alterations and reductions in the expenses of management will, it is hoped, effect all that is necessary in the way of saving, without intrenching on the privileges and the pleasures of the Fellows; but the Council desire to impress upon every subscriber the advantage to the cause of horticulture, of inducing his friends to take a warmer interest in the work of the Society, and to enrol themselves amongst its Fellows. No better way of effecting this offers itself than that of bringing them to visit the Tuesday Fruit and Floral Exhibitions of the Society. Under this belief the Council have given to the Fellows the fullest privileges for these Shows, and they have also raised the payment for admission to the Gardens on these occasions, to enhance the advantages which the Fellows' privilege of admitting friends enables them to confer.

"14. The Council are taking steps to get the tax removed from Tobacco purchased for horticultural purposes, and the Chancellor of the Exchequer has signified to the Council that he is very willing to receive a deputation of the Society on this subject. He will fix an early day for the purpose, and the deputation will be headed by the President of the Society, His Grace the Duke of Buccleuch. It is the intention of the Council to invite the leading horticulturists of the country to join in it."

REPORT OF THE CHISWICK BOARD.

"The attention of the Chiswick Board of Directors has, during the past year, been more especially directed towards restoring the Gardens to their former state of efficiency, so that little, comparatively, has been done of a strictly scientific nature. Some successful attempts at Hybridising, however, have been effected, the success of most of which is at present uncertain; one, however, a cross between the Ivy-leaved Pelargonium and some of the best zoned varieties, has been

happily accomplished, and it is hoped that out of the numerous seedlings some striking novelties may be produced.

"Attempts have also been made towards the cultivation of Truffles and different kinds of Mushrooms. The Truffle-bed has not yet been disturbed, but a better result than has attended other attempts is scarcely to be hoped for. It was, however, thought right that it should be tried on the best principles; and should it not succeed, they will not be deterred from further attempts. So little at present is known of the growth of Truffles in the infant state, that we must be content to work a good deal in the dark. As regards the Mushrooms, it cannot be known till next autumn whether any success has been obtained.

"A valuable series of observations on Radiation, and other cognate matters, has been made at the suggestion of Mr. Hadwen, which will shortly be published in the Journal.

"Great pains have been taken in verifying some of the doubtful plants in the collection.

"The Directors feel great pleasure in reporting the great success which has been achieved, as regards making the Gardens a school of Horticulture, by the employment of students in the work of the Garden. The results of the late examination are also very encouraging, and they think it may be advantageous, both to the Society and to young men entering on the profession of gardening, if the number were extended as opportunities permit.

"Pomological Section.—*Fruit Department.*—With the view of continuing the experiments in the comparison of the numerous varieties of fruit now in the collection at the Garden, and especially in the vast number of Vines, the glazed wall was converted a few years ago into an experimental vinery, where all the varieties are trained against the wall on the 'single rod' system, by which means no less than 128 varieties have been planted. The last was the first season in which any great number of these Vines produced fruit, and many important observations were made which, however, it would be premature at present to announce, until they have been confirmed by the experience of another season. It is believed, from what the Board have seen, that many of these so-called new varieties will prove to be old kinds under new names, some will be found to be entirely worthless, while not a few must become useful and permanent additions to those already in cultivation.

"Great confusion exists among the large section of Grapes included under the name of Chasselas; and for the purpose of throwing as much light as possible on the subject, plants of all the varieties known to belong to that section have been propagated and grown in pots; and in the ensuing year the whole collection will be fruited, and many points on which much doubt has hitherto prevailed will be cleared up, and this important section of the Grapes will be reduced into proper order.

"Another very important subject which has engaged the attention of the Board is the collection of Figs, of which there are now seventy-four varieties in the Garden. Since the last Report was made, the house in which the Figs were usually grown has been entirely reglazed; every alternate sash-bar has been removed from the lights, and the small squares of dirty glass, with their numerous overlaps, have been supplanted by squares of large dimensions, thereby introducing a flood of light, which is essential to the successful perfecting of the fruit of the Fig. Considerable progress has also been made in the identification of old varieties under new names, and in the fruiting of others that have not hitherto been introduced to this country; but, as in the case of all new fruits, great caution is required in coming to any conclusions on the subject, and, therefore, before any report is made, the Board consider it judicious to repeat their observations another season, when, judging from the promising appearance of the trees, they expect to derive greater facilities for coming to a satisfactory conclusion than have hitherto been afforded.

"For the last few seasons repeated attempts have been made to investigate the collection of Strawberries, but without effect; the plantation which existed in the Garden having, in common with others throughout the country, suffered from the successive effects of late spring frosts and summer droughts, it became necessary to form an entirely new collection, including in it all the varieties that were known to exist either in this country or the Continent. Through the liberality which always characterises the nursery trade in its relations to the Society, the Directors have the pleasure to report that the new plantation, which has been formed on a newly-prepared piece of ground, now includes no less than 286 varieties, and it is hoped that in the year 1868, should no untoward event arise, a rare opportunity will be afforded to the Fellows of the Society and those interested in the subject to study this extensive collection.

"It has been found that the old collection of Apples on Paradise stocks, which occupies the borders of the orchard and kitchen garden, and which is coeval with the existence of the Garden, is rapidly falling into decay, and although by certain treatment the trees might be renovated and rendered healthy and fruitful, the expense and labour that would be incurred in arriving at this result are so great that steps are being taken to gradually remove these old trees and to form a new collection with others of a younger and more healthy growth. Another and perhaps the greatest objection to the continuance of these trees is the fact that most of them are grafted with several distinct varieties, which in many instances have been double-worked, and the evil results that arise from this circumstance, where so many applications for grafts are furnished to the Fellows from these trees, are in themselves sufficient to justify the course which the Board propose to carry out. Every care has been taken to preserve the full collection, and, in anticipation of the destruction of the old trees, scions have been taken from them, and these being worked upon stocks, have now grown into handsome young trees ready to take the place of their predecessors.

"During the past season the Plum and Cherry crops have been an entire failure, and for all practical purposes have been productive of no useful result. The great uncertainty there is in securing a crop of Cherries, whether from the damage done to the bloom by late spring frosts, or by birds when a crop has been obtained, has induced the Board to institute a course of experimental examinations by growing the trees in pots and cultivating them under protection. This appears to be the only alternative where a large collection has to be dealt with, and where it is impossible to protect every individual tree when out of doors. The Board, therefore, propose in future to grow all new varieties that may be received, in pots, and to add to them when young trees can be obtained all the old varieties in the garden, so that future experiments may be carried out with some reasonable prospect of success.

"Every opportunity is taken of securing the novelties which are announced, and it is the object of the Directors to render the collection of fruits in the Chiswick Garden as complete as it is possible to be, so that it may become a centre of reference upon all subjects relating to fruits and to fruit-tree culture. It is with much pleasure that they have to record the great liberality of the Rev. John Huyshe, of Clysthydon, near Exeter, who has been the successful originator of several valuable varieties of Pear bearing his name. Among these varieties was one of unusual size and excellence, which has been named Huyshe's Prince Consort, and the entire stock of that variety Mr. Huyshe has placed at the disposal of the Society. Upwards of a hundred young trees have been propagated of it in the Garden, and these, along with two or three hundred scions sent by Mr. Huyshe, have been distributed in the first ballot of this year.

"It is gratifying to see the unabated interest which the nursery trade, and others connected with the pursuit of horticulture in the country, manifest in the maintenance and success of the operations at the Garden, as exemplified in the liberal donations of any novelties they may possess, and the desire that the Society should have an opportunity of comparing, examining, and proving the various subjects of horticultural interest. It is also an encouraging sign, and an evidence of the important services the Society can render to horticulture, to find so many applications from so many of the professional as well as amateur Fellows of the Society for scions and seeds of fruit and ornamental trees, either for the augmentation of their collections or for the careful preservation of the nomenclature of the subjects of which these collections are composed.

"*Vegetable Department.*—In the Vegetable Department the experiments in proving the varieties of new vegetables and comparing them with the old have been continued. In the past season the Board resolved to investigate the varieties of garden Peas, and with this view obtained, through the liberality of the nursery and seed trade, the seed of considerably upwards of one hundred sorts, all of which were sown on ground skilfully and carefully prepared. Unfortunately, however, the ravages of slugs and of other predatory insects, which resisted every means adopted to exterminate them, were such as to entirely destroy the whole crop, and this having occurred a second time with a crop sown after the destruction of the first, the desired result was not obtained. The attempt will be made again this season, when it is hoped that better fortune will attend their labours.

"The crops of which successful examinations have been made are Onions, Beet, and Celery, and of these the reports will be published in the Journal of the Society in due course.

"Floral Section.—As regards the Floral Department, while the supply of bedding plants for South Kensington, as well as of flowering and other ornamental plants for the decoration of the conservatory, has been maintained, other plants of interest have from time to time, so far as the glass accommodation has permitted, been sent from Chiswick to the Tuesday meetings and Saturday promenades. A new lean-to house has now been erected, and a second house is in course of removal from Kensington, for the purpose of more fully carrying out this latter object. These additions and some modifications with respect to the older erections, will not only much facilitate the keeping up of these several supplies, but will also give to some extent the increased facilities that were necessary for experimental cultivation, and for supplying plants for the ballot distributions.

"The cultivation of New Flowers for examination by the Floral Committee has been carried on as usual. In the course of the season, the trial beds have not only proved attractive to those who visited the Garden, but have afforded valuable information to many persons who sought it as to the habits, qualities and colours of the different plants. To the trial beds of former years was added, during the past year, a series of beds for the growth of examples of the now fashionable group of Sub-tropical Plants, so much used for summer garden decoration, and a very interesting collection of these was brought together. The thanks of the Fellows are due to those gentlemen who were good enough to contribute these various subjects, intended either for experimental culture or for purposes of public reference.

"A considerable space of ground, which had been previously prepared for the purpose, was during the past season planted with a choice collection of Conifers presented to the Society by Messrs. Veitch & Sons,

Messrs. Waterer & Godfrey, Messrs. Lee, Messrs. Osborn & Sons, Mr. Dancer, Mr. Standish, and Mr. W. Paul. When established, these will afford useful information to those gentlemen who may wish to make selections for ornamental planting. A collection of Roses was also contributed by Mr. W. Paul, Mr. C. Turner, Messrs. Rivers and Son, and Messrs. Wood & Son.

"It is yet too early to ascertain the amount of damage occasioned by the excessive cold to which the Chiswick Garden was exposed during the frosts of January 1867, but it is to be feared that half-hardy subjects will have suffered severely."

The PRESIDENT said the other Reports appended to that which had been read were in the hands of the members of the Society, and as they were rather long it would not be necessary to read them, every member having a full opportunity of making himself acquainted with their contents. They would, with the consent of the meeting, be taken as read (hear).

The Rev. GEORGE CHEERE then moved that the Report just read be received and adopted.

Mr. HARRY CHESTER said, before the question was put he wished to be allowed to make a few observations. The meeting was very satisfactory, and no one could fail to observe it as contrasted with their meeting of two years ago, when there was a great deal of excited opinion; but now quiet reigned, and excited feelings were gone. But though there was an improved condition of affairs, the meeting was not so numerous as on that occasion, when the room was filled. There were two points in the Report of great interest. In one of them he (Mr. Harry Chester) had taken a very great interest, having been the first, he believed, to bring the matter before the Society, and that was the education of gardeners. The scheme had been well received by the Council, and he had the pleasure of serving on the Committee, who investigated that and other matters. There were some who had doubts as to the possibility of the Council carrying out the scheme recommended by that Committee, but the majority were in favour of it. A very considerable portion of the scheme had been carried out, and it was satisfactory to find it had been attended with such excellent results. Nothing could be more important to the Horticultural Society than the education of gardeners, and he (Mr. Harry Chester) would be glad if some member of the Council would tell them more in detail what had been done, as the passage in the Report referred to it only in a very cursory manner, and he should like to know more about it. That was one point, the other was a matter that was referred to with a vagueness in the Report which he could not understand—he meant the relations that existed between the Royal Horticultural Society and the International Horticultural Exhibition. On that part of the affairs of the Society the Fellows were entitled to have more information. That Exhibition arose out of the visit of the Society's representatives to the Brussels International Exhibition. It appeared from the statements which had gone forth that the Royal Horticultural Society had treated the Exhibition Committee with great liberality, and it also appeared that an arrangement was made that under certain circumstances the gardens were to be kept open longer than had been agreed; a certain portion of the profit arising therefrom to come to the Royal Horticultural Society. It appeared that during the first four days of the Exhibition (the time fixed originally as the duration of the Exhibition), there was a complete failure, and instead of the Committee of the International Horticultural Exhibition having a profit, there was nothing but a loss, and, of course, the obligations of the management to pay expenses, would have been very great indeed. The act of the Royal Horticultural Society prevented that, which would have been a very great discouragement to future exhibitions. Now, the way he understood it was, that a proposition came from the Exhibition Committee through Sir W. Dilke—who, by-the-by, he (Mr. Chester) did not see present, though he wished he did. The Exhibition Committee sent Sir Wentworth Dilke to negotiate with the Royal Horticultural Society, and the Society gave them a chance of turning that into a great success which had been at its outset, and as originally projected, a failure. The Society agreed to open their grounds for another week, for which concession the Exhibition Committee were to pay all the expenses; if there was a loss the Society would not claim anything from the Committee, but if there was a surplus, then the Society were to have a portion of that surplus. Certainly that seemed a natural bargain, and one entirely within the limits and course of natural justice. This was agreed to by Sir Wentworth Dilke; a memorandum of the matter was made, and a minute drawn up, which was read over to him, and he received it before the Exhibition took place, and they (the International Horticultural Exhibition Committee) were bound by that which had been agreed upon and put in writing, and given to Sir Wentworth Dilke, the Chairman of their Executive Committee. But for the Society that Committee would have been large sufferers; they (the Society) had come forward liberally, and did that which had brought about the good result of a large surplus. Now what was to become of that surplus? Few persons knew even what it was. There was no doubt the money had been given by a great many people, and it was difficult to say what the Committee were to do with it, as could be easily done if it had been received for any well-defined purpose. Then they could not give it for anything else. It might, perhaps, be wise to keep it, and not do anything at all with it; for if it were a trust no power but the Legislature and the Court of Chancery could give the trustees power to alter the trust. Then the Managers of the Exhibition had thought proper to make a grant of £1000 to the Gardeners' Benevolent Institution, and though he (Mr. Harry Chester) did not know if there was any lawyer present, if there was, he would be glad to ask him if that grant was legal. He did not want to dispute it, that was not his object; he did not want to complain, but what he did want to say was, that there was still a large surplus, and did not the Committee intend to give the Society any of it? (hear and cheers). It seemed to him that according to the undertaking that had been entered into, that the Society ought to have some (hear). It was said that it was proposed to invest a portion of that surplus in the purchase of the Lindley Library. No doubt it might be desirable that should be bought, but he begged to say they had no right to do anything of the kind. It seemed to him (Mr. Harry Chester), that it would be only right that the surplus, or, at all events, some of it, should be handed over to the Society, and then by an arrangement it might be agreed between the Royal Horticultural Society and the Committee of the International Horticultural, that the Lindley Library might be purchased out of that surplus, and become the property of the Royal Horticultural Society. He spoke without having seen the Reports of the two bodies, and he hoped before the present Meeting proceeded to the final adoption of the Report that was now before them, that the members would be favoured with some explanation by the Council. There was another body who treated the International Exhibition Committee with great liberality. He (Mr. Harry Chester) referred to Her Majesty's Commissioners of the Exhibition of 1851, who gave the use of the ground without any charge, but they were not in a position to ask the Committee of the International Exhibition to give them any portion of the surplus, nor, indeed, did he (the speaker) suppose that they would; and, in fact, if they did the Commissioners would not take it, but the Royal Horticultural Society were indebted to the Commissioners, and if the Society could get any of that surplus, it would in their present financial position be of great use, as it could be handed over in part payment of the amount in which the Society were indebted to the Royal Commissioners of 1851. Possibly His Grace the President, or some other gentleman connected with the Council or with the Committee, would kindly inform the Meeting of the views entertained of what he (Mr. Harry Chester) had said.

Mr. EDGAR BOWRING, the Secretary to the Royal Commissioners of the Exhibition of 1851, said that if the question had not been raised, he should have felt it his duty to have brought it before the members of the Society in his capacity as one of the Fellows. He would just state the matter shortly, which was simply this: The Council submitted to the Expenses Committee their estimates of the receipts of the year 1866, and on that statement the Expenses Committee based their corresponding expenditure. They have no legal control over the application of their receipts, but they have over their expenditure. In the anticipated receipts there were three matters which they took into account—the exhibitions, the promenades, and the special fêtes. Now, the Society proposed to give up the Great Summer Exhibition from which a great share of the profit was derived, as they thought the public would get so *blasé* with shows that they would not care to go Then as to the special fêtes it was found that they really realised more than they were estimated at. Now the total estimate under these heads for the year 1865 was £2630, and for 1866 only £2180, or £450 less than in 1865, and it seemed that if the Society took a sum of £300 in return for the very large sacrifice they would sustain in not holding their Summer Show, and allowed this in the estimate, that would meet the case. Therefore the estimate was passed by the Expenses Committee with only the difference of £150, that being the absolute amount of difference between the two years. He (Mr. E. Bowring) would not deny that the bad weather necessarily affected the receipts of the promenades, though not to such a very great extent as might have been expected, because the class of persons upon whom the Society chiefly relied for that source of income had left town when the very bad weather set in. The Expenses Committee knew very well that as far as the special fêtes were concerned the funds must suffer very seriously, and it could not for a moment be denied or concealed that the monetary panic which had prevailed had made a great difference in the receipts. All those matters had been detrimental, and it was now found that the receipts had been £930 less than the estimate, and that being added to the amount short already indicated of £150, showed a deficit of £1080 as contrasted with the previous year. Then it seems that there arose a state of things which had never been contemplated by anybody, for the International Horticultural Exhibition, instead of being as at first had been anticipated a failure, had been by the action taken by the Royal Horticultural Society turned into a success, and the Committee found themselves with an unexpected surplus of £3000. Unfortunately, however, they were in the position of the Chancellor of the Exchequer, who having a surplus was applied to in all places and from all quarters, as His Grace, the President, would well remember had been the case with the Commissioners of 1851, who had the same difficulty in dealing with a surplus on a large scale. He (Mr. Edgar Bowring) was not a lawyer, but he had consulted some of his friends learned in that way (hear), and from them he had ascertained, that though the International Horticultural Committee had no legal right to do what they had done, no one had any power, or at least any right, to find fault with them for what they had done. The question under somewhat similar circumstances had been mooted as to the receipts of the Exhibition of 1851, but here it appeared that no one who had given anything was

entitled to have any control, having had the *quid pro quo*—the admission to the Gardens, and so on. The International Horticultural Exhibition Committee had given away the sum of £1000 to the Gardeners' Benevolent Institution. With regard to that grant there was no chance of its being impugned, or any fault being found with what they had done. Now, with regard to the Lindley Library, it was very important to the interests of the Royal Horticultural Society if it could be secured, but it would be a most disinterested act if it was paid by the Society out of the money which would come out of the *quasi* promises of the International Horticultural Exhibition Committee. If the Society obtained the Library, it would be better that it should not be held as the property of the Society, for fear of what might by any mischance transpire, and they would be better acting in the position of trustees, so that if by any mischance the Society should be broken up, it would still be a property available for the purposes and benefit of horticulture. Now, with regard to the acts of the International Horticultural Exhibition Committee they had a surplus of £3000. They had given £1000 to the Gardeners' Benevolent Institution, leaving £2000 in hand. Now if the sum of £600 was paid for the Lindley Library there would then be about £1400 left. No doubt there were some outstanding debts, which probably would amount to a few hundreds, so that there would still be a sum of about £1000 left, perfectly nett, with which they will not, as it appears, do what they ought to do. When the Council agreed to extend their time there was a great deficit, to avoid which they offered the *quid pro quo*. The Council think so, and I have reason to think there was a memorandum made as to the fact that if there was a surplus the liability to the Royal Horticultural Society should be fully acknowledged, that while all the monies should belong to the International Horticultural Exhibition Committee, if there should be a surplus, some portion of it should belong to the Royal Horticultural Society. It certainly did appear to him that if the Committee of the International Horticultural Exhibition considered how much their receipts had been affected by what the Society had done—when they saw that that which would have been a deficiency instead of the surplus which they had, had been obtained through the action of the Society, they would have acted differently. He (Mr. Edgar Bowring) would further say that at the meeting of the Expenses Committee, in passing the accounts and examining the statements, they did adopt a minute that the Society should have received a larger amount of compensation. There was another matter in which he thought there should be a more liberal concession by the Society towards those who had done so much for them. He spoke of the debenture-holders. There had been £50,000 raised, and they pay 4 per cent. Originally they paid 5 per cent., and there were free admissions to the amount of £2 2*s*. per annum; that made in reality 7 per cent. Subsequently it was agreed to take £4 per cent., receiving the same Garden benefits, or 6 per cent. instead of the 7 per cent. He (Mr. Edgar Bowring) thought there might be some arrangement by which the debenture-holders could be further recognised, and if they could have further admission—say to £4 4*s*. per annum, with £3 in cash, it would benefit the Society, and the debenture-holders would not be displeased. He begged to recommend that to the consideration of the Council.

Mr. HARRY CHESTER would be glad to know more with regard to the arrangements between the Royal Horticultural Society and the Committee of the International Horticultural Exhibition.

The DUKE OF BUCCLEUCH.—I think the best way will be to read the minutes—that will show that the matter has been under the consideration of the Council, and after the liberal way in which the Royal Horticultural Society has acted towards the International Exhibition Committee, if there be any surplus it ought to be handed over to the Society (hear).

Col. SCOTT said, the following was the memorandum made by Mr. Wilson Saunders at the time of his interview with Sir Wentworth Dilke:—

"All charges paid.

"Saturday to be 2*s*. 6*d*.

"Free entrance on Saturday to Fellows' transferable tickets.

"All moneys to be theirs, but in case of surplus a portion to be made over to the Horticultural Society."

Col. SCOTT continued by saying, that acting upon that as reported to be the result of the conference between Mr. Wilson Saunders, a meeting of Council was held, and the following minute resulted:—

"It having been arranged that the International Horticultural Exhibition should remain open until Thursday next, the 31st May, the Council agree to allow visitors to the Exhibition to have access to the Society's Gardens on the following conditions:—

"'The Committee of the Exhibition are to undertake all the expenses of the Gardens until Thursday next inclusive. All money taken at the doors to be received by them. On Saturday, the 26th, the entrance to the Exhibition and Gardens to be at 2*s*. 6*d*., and Fellows and Debenture-holders to be admitted to the Exhibition on showing their tickets, in the same manner as on Wednesday last, the 23rd inst. The Committee of the International Horticultural Exhibition to be responsible for all damage done to the Gardens. In consideration of these concessions on the part of the Society, should there be any surplus in the takings of the Committee, the liberality of the Royal Horticultural Society will be duly acknowledged.'"

Col. SCOTT in continuation said, that a copy of that minute was sent to Sir Wentworth Dilke on the morning of the 25th of May, 1866, and the Exhibition opened for an extra week, commencing on the morning of the 28th. On the 7th of June, the following letter was received by the Assistant Secretary:—

"76, Sloane Street, S.W., 7th June, 1866.

"MY DEAR SIR,—When I asked for the copy of the decision of the Horticultural as to admitting the International visitors, I merely did so that we might have a record, and when you told me you had sent it here I thought it of so little importance, being aware, as I supposed, of the contents, that being busy I did not open it. At the end of the Show I was attacked with severe illness, and it was only last night that I read it. I regret this, because the last paragraph is one that I could not have permitted to remain one minute unanswered had I seen it at the time; I feel strongly that it ought never to have been entered. In conversation something was said about doing something for the Society, and I replied to the effect that the Council knew *my* view, as I had at the first meeting proposed that any surplus should be apportioned between the Gardeners' Benevoleot and the Horticultural, but that having been refused by the Society I knew not what the views of the International Committee might be, but that I personally had just had suggested to me what appeared a good idea to try and form a Lindley Library. This was all *my* talk; I had no power to bind the International Committee. The subject had not been attended to at the meeting with Mr. Saunders. I must ask that this letter be put on record.—Yours truly, (Signed) "C. WENTWORTH DILKE.

"Captain Cockerell, &c."

The subject, said Col. Scott, was brought before the Council on the 19th of June, and it having been discussed on the 25th, Mr. Wilson Saunders wrote the following letter:—

"Lloyds, 25th June, 1866.

"MY DEAR SIR,—I return to you Sir Wentworth Dilke's communication. The Council knows almost as much as I do of the matter, and the subject had better be brought forward next meeting, when I hope to be present. My own view of the case is, that Sir Wentworth Dilke on the part of the Committee acknowledged the principle that in case of any surplus accruing to the International Horticultural Exhibition the Royal Horticultural Society should have a claim therein. All this is in the minutes of the Council, and I think fully stated. I see nothing to blame on the part of the Council, and the whole matter rests with Sir Wentworth Dilke and his Committee, and no difficulty need arise. If they have a surplus, and will not meet the views expressed in the minutes of the Council, the matter must rest there.—I am, yours truly,

"W. WILSON SAUNDERS.

"Captain Cockerell, &c."

On the 31st January, 1867 (continued Col. Scott), a letter was written by Mr. Moore, Exhibition Secretary to the Committee of the International Horticultural Show, to which the following answer was sent, with a copy of the extract of the Council minutes, and a copy of the memorandum made by Mr. Wilson Saunders, both of which are alluded to in the letter. The letter itself was as follows:—

"Royal Horticultural Society, South Kensington, W.

"7th February, 1867.

"SIR,—In reference to your semi-official note of the 31st ult., concerning the intentions of the Committee of the International Horticultural Show, with respect to the disposal of the surplus of the International Exhibition, I have the honour to enclose a copy of the minutes of Council of the 24th May, 1866, to remind you of the terms on which the Council granted the use of the Society's Gardens to your Committee for another week. A copy of these minutes was at once sent to Sir Wentworth Dilke, the Chairman of the Committee, acting as their representative to negotiate the arrangement, and a memorandum of the result arrived at at the conference (a copy of which I enclose), was read to and approved by Sir Wentworth before he left the meeting. I have to request that you will lay this communication and enclosures before your Committee at the earliest opportunity.—I have the honour to be, &c.,

(Signed) "HENRY SCOTT, Secretary.

"Thomas Moore, Esq., &c., &c."

Having (continued Col. Scott), forwarded these, the next communication was as follows, from Sir Wentworth Dilke:—

"76, Sloane Street, 8th February, 1867.

"DEAR SIR,—Mr. Moore has placed in my hands certain papers relating to the Royal Horticultural Society and the International Horticultural Exhibition, and I must confess I am surprised to find that you have not included the letter I wrote immediately that I read the minutes, in which letter I distinctly stated that such minutes were incorrect. I have to request that a copy of my letter may be forwarded to be appended to the others.—I am your's truly, "C. WENTWORTH DILKE.

"Captain Cockerell, &c."

Col. Scott continuing. The following letter, enclosing that dated the 7th June, 1866, which has already been read to the meeting, was then forwarded, and on the same day a letter was also written to Sir Wentworth Dilke, which the meeting will hear read in its order:—

"Royal Horticultural Society, South Kensington, W.

"9th February, 1867.

"DEAR MR. MOORE,—I have received a note from Sir Wentworth Dilke requesting that a copy of his letter to Captain Cockerell, dated June 7th, 1866, concerning the arrangements between him and the Council for the use of the Society's Gardens by the Committee of the International Show, should be sent to you to be appended to the other correspondence on the subject. I accordingly enclose a copy of it, and have only to add that the omission of it when I sent to you the Council's minutes did not arise from any fear that the Society's position would be weakened by it.—I remain, your's very truly, (Signed) "HENRY SCOTT.

"Thomas Moore, Esq., &c."

The other letter was as follows:—

"Royal Horticultural Society, South Kensington, W.

"9th February, 1867.

"DEAR SIR,—I have forwarded a copy of your letter of 7th June to Mr. Moore as you request. I did not read it with the other documents, because I thought it possible that the evidence of the whole Council present as to what took place between you and them being opposed to your own impressions of it, you might be inclined to consider that the fault of

the misunderstanding lay with you, and act accordingly. Whether, however, you or they are in fault as respects the misunderstanding on the terms supposed to be agreed upon, there can be no doubt that the Committee should bear the responsibility of it, since you, their Chairman and Delegate, had in your possession a copy of the minute before they entered upon the occupation of the Gardens for the second week. I thought, therefore, that it was my duty as Secretary to send evidence of this to the Committee as soon as Mr. Moore conveyed to me semi-officially what their probable course would be. I have only to add that the omission of your letter from the correspondence was not caused by any desire to place the Society's position in a better light.—I remain, dear sir, your's faithfully, (Signed) "HENRY SCOTT.

"Sir C. Wentworth Dilke, Bart., &c."

That, said Col. Scott, completes the correspondence.

Mr. EDGAR BOWRING just wished to add one word of confirmation on that correspondence. He remembered having some conversation with Mr. W. Wilson Saunders on the matter, and amongst other things suggested was a royalty on each person entering the Gardens, but it was thought better not to interfere with the arrangements.

Mr. WILSON SAUNDERS wished to observe that his name having been brought forward, he would tell the meeting shortly what really took place, and why his name had been so brought forward in the transaction. A special meeting of the Council of the Horticultural Society was summoned to consider a proposal made by the Committee of the International Exhibition, and Sir Wentworth Dilke attended. The matter was brought before the Council, and Sir Wentworth Dilke said it would be desirable that, considering the large outlay and expenditure, the Exhibition should be kept open for some days longer. The Council considered that though they were not called upon to do so, yet there was every desire and every wish to serve the Committee, as they had incurred great expenditure, and it was thought very unadvisable to refuse to do anything which would be likely to cause an increase of the liabilities of the guarantors. Looking at it with that view, certain proposals were made, and it was thought that they (the Horticultural Society), would treat them (the International Committee), in a liberal way, and they said that if no profit was made then the loss should be borne by them; but if they did make any profit, then it was considered that the Horticultural Society should in fairness receive some portion of that profit. As the conversation went on he (Mr. Wilson Saunders) jotted down the gist of the argument which was carried on between the Council on the one side and Sir Wentworth Dilke on the other, as already read by the Secretary (Col. Scott), and the memorandum was in his (Mr. Wilson Saunders's), own handwriting as taken at the time. That there might be no mistake he would read it again:—"All charges paid. Saturday to be half-a-crown. Free entrance on Saturday to Fellows and transferable tickets. All money to be theirs, but in case of surplus a portion to be made over to the Horticultural Society." Those propositions were agreed to, and on that Sir Wentworth Dilke went to see his own Committee, and they (the Council) waited to meet their pleasure. After some very short delay the Council were either summoned or asked to go—at all events they did go to meet the Committee of the International Exhibition. It was a very hastily got together Committee—made under the arcade, and they were very anxious to have the matter settled at once, so that the bills might be got out and the advertisements issued. The Committee having heard the terms, agreed to them, and Sir Wentworth Dilke returned to the Council-room, and the minutes as they were drawn up were read out. That was exactly what took place as near as he (Mr. Wilson Saunders) could recollect. Yes, he was sure they were read out, and that was all that he knew about it. It was an agreement that they should meet the Council in that way, and the Council would meet them. The Council did so in a most straightforward, friendly, and liberal spirit, and the Council now expected the Committee of the International Horticultural Exhibition would look on the Royal Horticultural Society in the same way (hear).

Mr. HARRY CHESTER viewed the letter of Sir Wentworth Dilke as disclaiming his having any power to bind the body for which he was acting. He (Mr. Harry Chester) would have thought that Sir Wentworth Dilke had come to the Council from his Committee to bind them, and if they were not bound by his agreement, of course it never took effect; but clearly there was an agreement, by virtue of which the Exhibition was opened for a week longer than originally settled. He (Mr. Harry Chester) supposed Sir Wentworth Dilke merely meant to say that he could not bind the application of any particular portion, but he certainly did bind them as to some portion of the surplus. It certainly seemed to him (Mr. Harry Chester) that it would be better to refer the matter to some person—not necessarily a lawyer, but some person possessing a legal mind, and get him to state what ought to be done under the circumstances. That would bring the matter to a fair and reasonable issue; for while the Council of the Royal Horticultural Society did not want to press their claims unduly, or accept anything from the Committee of the International Horticultural Exhibition in the way of charity, still the Society ought not to give up anything to which they were entitled (hear, hear).

Mr. W. WILSON SAUNDERS would call the last speaker's attention to the fact that it was the correctness or the incorrectness of the minutes to which Sir Wentworth Dilke referred. He impugned the accuracy of them.

The subject then dropped.

Colonel CHALLONER could not but congratulate the Society on the great improvement which was visible in the financial statement, which, however, he could not help observing was still simply a cash account. What he wanted was a little more. He wanted a statement of the liabilities which the Society was now under, that the Fellows might know how much they were in debt. A statement was rendered in the account before the Meeting of the means of repaying what they had borrowed, but he (Colonel Challoner) would like to see a statement where the means of repayment were given on the one side, and the amount of the debt on the other. As an old member of the Society he was anxious on that point; and though he had found it was always difficult when he sat at the Council to obtain such a statement as he wanted, he (Colonel Challoner) would only say that experience did not seem in the least to lessen the difficulty. He would respectfully suggest that if His Grace the President would express a wish to the Council on the subject, the Fellows would soon be furnished with a more definite and clear statement of the real obligations of the Society than that afforded. There was one gentleman sitting near the noble President—he (Colonel Challoner) alluded to Mr. Wilson Saunders—and if that gentleman who was so useful and energetic in promoting the objects of the Society would also look to the subject it would all come right, and the desired information be rendered. He (Colonel Challoner) did not wish to be misunderstood in what he asked, for he would say, though he wanted more (a laugh), yet the cash account was very clear and better than what they had hitherto had.

Mr. JAMES WHEELE desired to suggest that there should be some alteration in the rules with regard to the Gardens at Chiswick, so that the Fellows if they asked for anything, surely ought to have something given to them; not, of course, the best cuttings, but something.

The PRESIDENT did not think there would be the slightest difficulty in any Fellow having either buds or cuttings if they wanted them, except, of course, under exceptional circumstances. It was quite allowable for them to be given.

Mr. WHEELE would merely say that when his gardener went there to ask for a few cuttings, he was told by the man he spoke to that it was as much as his place was worth to give him anything.

Mr. WILSON SAUNDERS submitted that perhaps the man had not any authority with him as to who he was.

Mr. WHEELE assured the worthy Member of the Council that the man who gave the answer was told who it was.

Mr. WILSON SAUNDERS assured the last speaker that it was invariably done—at least, such were the orders.

Colonel BURLETON thought it right to mention that he went there and was told he could not have any cuttings, but if he chose to buy any fruit or Grapes he might do that; but as to any cuttings being given him, that was not in the province of the gardener to whom the request was made.

Mr. WILSON SAUNDERS wished to know who his friend asked for the cuttings.

Colonel BURLETON did not know the man's name.

Mr. WILSON SAUNDERS could only say that the last speaker should have gone to the right person, Mr. Barron.

The PRESIDENT said that, as he understood the matter, any application must be made to Mr. Barron, the head gardener, and none of the under gardeners had any power or authority to give anything away. His Grace felt quite sure that the members of the Society would see how important it was that the sole power of giving away buds or cuttings to the Fellows should be vested in one responsible person; but if there was any difficulty about it the Council would see into the matter and put it on the proper footing. Several important points had been raised and discussed, and now, it having been moved that the Report be received, would some gentleman second that proposition?

Colonel CHALLONER had much pleasure in seconding the motion that the Report be received and adopted.

The PRESIDENT put the question, which was carried unanimously.

Major R. TREVOR CLARKE wished to say a few words as to the Lindley Library, which he feared was likely to slip away on account of lack of funds—that the Society could not afford to buy it. There was no doubt that it was very valuable, not only from its own intrinsic merit, but from old associations and other causes. The Fellows would remember it was not the first time the Society had been in possession of a fine library, and he (Major Clarke) would not say that they were ignominiously sold, because the sale was from a good motive, but he would say, for he knew it, that it went to the hearts of all the members of the old Society. They had now a second chance, a chance of obtaining a most valuable library which would be endeared to them all by old associations; and he heard with pain and grief that it was proposed to sell it again, and that the Royal Horticultural Society could not afford to buy. Now, if they were poor they were honest, and as they were many so he was hopeful, and had a strong belief, that there was a stern determination now to recover the fortunes of the Society by energetic and well-directed economy; but he (Major Clarke) would not believe they were so poor as not to be able to get that valuable library. They might be hard up (a laugh), but not so hard up as that came to; and for one having the interests of the Society deeply at heart, he said, not only let them keep it, but build a place for it, so that they might look up to it as "household gods." The excellent Secretary of the Society had got them down "there," locked up in a place which might be a kind of stable; and having them under lock and key, he (Major Clarke) hoped he would keep them there (hear). He would propose, or rather he would suggest, that the

Lindley Library be not sold, but that the Royal Horticultural Society become the guarantors, and surely they might arrange to pay for it by the end of next year if they could not do so now. For his own part he should be glad to give a £10 note, and surely there would be many who would come forward and preserve so very valuable a possession for the Society (hear, hear).

The PRESIDENT observed that the real question was whether the Society was in a pecuniary state to enable them to keep the Library. Had they in the present condition of the funds power to lay out £600? If they were able to do so every one must feel it was very desirable it should be preserved for the Society. The Council would be most willing as well as himself (the President) in doing anything that should be deemed advisable to assist in the important object suggested (hear).

The Scrutineers, Messrs. Fortune and Booth, then delivered in the ballot papers, and it appeared that Lieut.-General the Hon. C. Grey, Major Trevor Clarke, and Mr. Wentworth W. Buller were unanimously elected to fill the ordinary vacancies in the Council in the room of the vacating members, Mr. W. Wilson Saunders, F.R.S., Sir Arthur Buller, and the Right Hon. W. Cowper, M.P.

The officers elected were as follows:—President, His Grace the Duke of Buccleuch; Treasurer, Mr. Geo. F. Wilson, F.R.S.; Secretary, Lieut-Col. Scott, R.E.: Expenses Committee-men, Mr. Geo. F. Wilson, F.R.S., Lieut.-Col. Scott, R.E., Mr. Henry Cole, C.B.; Auditors, Mr. James Nicholson, Mr. John Gibson, Mr. Robert Hudson.

The PRESIDENT declared the elections carried, and that concluded the business of the Meeting.

Col. CHALLONER proposed a cordial vote of thanks to the Duke of Buccleuch for his courteous and obliging conduct in the chair, which proposition was seconded by Mr. Harry Chester.

His Grace expressed his thanks for the compliment, and the Meeting terminated.

LUTON HORTICULTURAL SHOW—TIREBUCK'S PELARGONIUMS.

DURING last season there were two very good horticultural and floral exhibitions in the town of Luton, of which, but for the press of other matter, I had intended to take some notice. I would then have alluded to some of the drawbacks, and to some of the causes which operate as hindrances to success in the case of provincial exhibitions, and I may yet do so before exhibition times come round. There was nothing wanting at Luton to command success but at least a tenfold greater attendance of visitors, and considering that Luton is pre-eminently distinguished alike for the number, the beauty, and the industry of its female population, it was a matter of regret that many more of them did not attend to show that "beauty" could admire the beautiful. In all such cases in manufacturing towns, and especially until such exhibitions were thoroughly established, it would be wise policy, instead of having tents in an open meadow, to have the show in the largest room that could be obtained, and to have the room open until between nine and ten o'clock in the evening. If in such a case those who could not well leave their duties during the day did not attend, it would then be proof positive that in that particular place there was no taste for such things, and that even the love of the beautiful, which some contend is innate, especially in female character, would require to be formed before it could be fostered.

I shall not at present say anything of the excellent productions contributed by the manufacturers, merchants, tradesmen, gardeners, and cottagers of the town and neighbourhood, but would add that the exhibition was much indebted to Messrs. Lane for a fine collection of Roses; to Mr. Spriggins, nurseryman, of St. Albans, for a similar collection; to Mr. Watson, of St. Albans, for another, also for beautiful Ferns, and a well-grown collection of the best tricolor Pelargoniums, including fine plants of the beautiful Miss Watson; and to Mr. Tirebuck, nurseryman, Luton, for a large miscellaneous collection of plants, including a number of seedling Variegated and Zonale Pelargoniums, which arrested a good share of attention, on account of their merit. After seeing a goodly number of seedlings during the season, I picked out a few from those exhibited, and examined them again in the houses and grounds at the nursery, and though my opinion might not be the same as that of others, or even in unison with that of Mr. Tirebuck, the varieties selected are what I would like to have the chance of cultivating myself.

1. PELARGONIUMS WITH FINE FOLIAGE.

Kate Tirebuck.—This is chiefly distinguished from Mrs. Pollock by the zones of yellow and purple being broader, brighter, and more conspicuous.

Patriot.—Chiefly distinguished from Mrs. Pollock by its growth being more free and vigorous—a matter of importance in some places.

Dandy.—A pretty little variety, in the way of Italia Unita, but far more vigorous in its habit.

The following two would make brown-tinted beds. I forget what the flowers are like.

Richard Kelly.—The centre and edges of the leaves greenish yellow, with a broad brown zone between them.

Catharine.—Greenish yellow edging, narrow plain green centre, and deep brown zone between. These two will not compare with the Mrs. Pollock and Italia Unita sections, but they are distinct, and from their free growth would flourish where the others might be miffy and sickly.

Lady Slade.—I mention this, because with scarcely a tinge of green on a leaf or two, all the other leaves were of a pure white, and had maintained the same character for more than a twelvemonth. I have met with a few seedlings, and plenty of sports of this white colour in the leaves, but I never knew them continue in health, or even in existence for any length of time. I should even be doubtful of her ladyship keeping her white robes unsullied; but time will tell.

2. NOSEGAY PELARGONIUMS.

Felix.—This, as noticed by myself, is a beautiful kind for a low bed. The neat green foliage carpets the ground, the flower-stalks rise thickly 6 or more inches above them, the trusses are large, the individual flowers small, and flickering with every breeze, and the colour a lilac pink. A little gem.

Oliver Twist.—Very bright red flowers, large trusses, good habit.

Masterpiece.—Bright orange scarlet flowers, deep green foliage, dwarf compact habit; free bloomer.

Stella Improved.—Bright scarlet; free blooming.

Cerise.—Scarlet Nosegay; huge trusses; compact habit.

Jewess.—Indian Yellow scarlet; large truss of blooms; foliage deep green, with a black zone.

3. PELARGONIUMS WITH REGULAR-FORMED FLOWERS.

Emily Moreland.—Bright scarlet flower, with a white eye; dark zoned foliage; free blooming, medium as to vigour of growth. A very nice variety.

St. Clair.—Pink salmon or cerise scarlet blossom; individual flowers very large; trusses large.

Luton Gem.—Deep scarlet, shaded with a light stripe, large truss.

James Nixon.—Crimson scarlet, large flower, large truss, free-blooming, dark zonate foliage.

Crimson Cushion.—The crimson is striped with white, and the habit of growth compact.

Tirebuck's Gem.—Rosy blush colour, free blooming, good habit.

Out of some scores of good flowers I have selected six in each division, and were they for my own growth, and I could only take a few, I would choose those first named, preferring the first to the second, the second to the third, and so on. No doubt Mr. Tirebuck will send out a larger list when the plants are purchasable. I will merely mention one more.

Pearl.—Pure white flower. An improvement on Madame Vaucher, so far as I could judge, the white colour remaining white, and not becoming pinky, as in Madame Vaucher, but I did not see it out of doors. The trusses were large, and the habit of the plant dwarf and compact.—R. F.

LET COMPETITORS BE FAIRLY MATCHED.

I HAVE a small garden and greenhouse, and in addition to turning out two or three thousand bedding plants annually, I grow a few specimens of Zonale Pelargoniums, Fuchsias, Chrysanthemums, and other plants. I have no gardener or assistance of any kind, and raise and plant everything with my own hands.

Having been rather successful last year with my specimen plants I thought I would exhibit at some of the neighbouring shows. I sent for some prize lists, and entered the plants in the classes open to amateurs and gentlemen's gardeners, the other classes being for nurserymen and cottagers only. I need hardly say I did not obtain a prize, and no wonder, for I was the only amateur exhibitor, and had to contend against the gardeners of noblemen and county gentlemen employing half a score of gardeners or more, with better appliances and more glass than most of our best nurserymen, and actually taking prizes over the nurserymen's heads at the same shows.

I looked carefully through the schedules of at least a dozen horticultural societies, and in every case the amateur was coupled with the gentleman's gardener. Now, I see no objection to an amateur competing with gentlemen employing not more than one gardener, and that restriction should be made in a few classes to give the *bonâ fide* amateur a chance. As it is he has none. If you can find space in your Journal for this protest against such an anomalous state of things I shall be obliged, and I trust it may be the means of opening the eyes of the committees of horticultural societies to the wants of the genuine amateur.—Calcaria.

IMPROVEMENT OF COTTON PROMOTED BY A KNOWLEDGE OF THE PLANT.

To ensure successful cultivation in pots under glass, I have noted certain points of treatment as essential. These will be embodied in the following remarks.

Specially Suitable Soils.—Without trenching upon botanical debatable ground, the great Gossypian family may be divided into two geographical races—the Asiatic and American—the first comprehending the Surats or native Cottons of India and perhaps Africa, and the second represented by the large-habited, robust denizens of the Western world.

These two races seem to require two distinct kinds of soil; light and moderately manured soil for the American, and peat for the Indian sorts. Strong loamy soil or an excess of manure will render the American Cottons perfectly unmanageable, inducing an unproductive luxuriance, and a tendency to drop the flower-buds and young bolls. On the other hand, Gossypium indicum and its varieties are much more delicate as pot plants, and will not thrive in loamy soil. Pure peat and sand must be used for them while in a young state, the material being strengthened by a sparing addition of loam and manure as the plants advance towards maturity. Skilful gardeners may be able to use other means; I only give the safe side of the question. The Americans do not require peat in any stage. Very careful draining is essential for every kind of Cotton. Manure water may be used with advantage to full-grown fruiting and flowering plants, and the agency of special manures, as, for instance, nitrogenous, phosphated, and saline, might be profitably studied. These might be added with the final shift, or applied in a liquid state at regular intervals.

Temperature.—The Cotton is a warm stove plant, and will not succeed really well unless treated as such. It may, however, be grown in a vinery at work, if not overshaded, during the hottest month of the year. The Indian plant, although grown to profit in Europe, is the tenderer race, and will require the warmest berth and the greatest share of attention.

Sowing and Rearing.—The first half of the present month of February may be considered on the whole the best time to sow. January sowing has its advantages, as tending to make the most of our short English summer, but the management is difficult to amateurs. Any good gardener, however, who has been used to grow winter Cucumbers, would find no difficulty; indeed, I sow all the year round in the prosecution of experiment.

Where accuracy of observation is desired, and little in the present state of confusion of sorts can be gained without it, the greatest care should be taken to ensure the identity of all seeds sown. It will be well to sow each seed separately in a small pot, labelling it at once, and repeating also the name or description in pencil on the side of the pot. No care or discipline that I know of will prevent gardening men or boys from losing or confusing labels. I am in the habit myself of causing all my seeds to germinate before sowing, by placing them under conditions of great warmth and moisture, in various ways well known to good gardeners.

The great condition of success now depends upon the encouragement of rapid growth by a quick succession of shifts, never allowing a moment's check, by over-development or matting of the roots, till the plant is established in its fruiting pot. The size of this will be regulated of course by the house room available. What is called a 24-sized pot will be large enough to afford five or six good pods of the New Orleans and Sea Island breed, and will grow comparatively large specimens of the Indian native sorts, which will thrive and fruit in much smaller masses of soil.

After-cultivation.—The plant at all times requires large quantities of water. Any irregularity in this respect will tend to produce the vexatious droppings of the bud, so ruinous even in the real Cotton fields of the planters. In watering the plants never leave off pouring till the water passes through and comes out at the bottom. In hot weather this will be required several times a-day. The sides of the pots should never be exposed to the full sunshine; this will often destroy the rootlets in contact in a few minutes, and so check the plant more or less. After such a check, growth will recommence, but at the expense of the previously formed buds, which are thrown off by the effort. When plants in bud or flower require to be shifted into larger pots, they should be afterwards placed in the most favourable situation for shade and moisture for the same reason.

Injury by Insects.—The plant is subject to red spider, and is very sensitive to the attacks of the common green aphis. These must be combated vigorously, but the difficulty in this respect is no more than may be readily surmounted by an industrious and clean gardener.

Period of Ripening, &c.—The early-ripening sorts, usually grown as annuals—that is, the different kinds of New Orleans, Sea Island, and Egyptian, with the majority of the Surat tribe, begin to ripen their pods in succession, from the end of July to the close of the year, flower and ripe fruit being often seen on the same plant. Late plants will continue to ripen through the winter in a warm, well-managed house. The bolls may be gathered as soon as they split open. The valves will then soon curl outwards from the loss of moisture, and the masses of seed and fibre being relieved from their pressure will swell out and show the beauty and quality of the staple. Pretty museum specimens may be made by cutting off the boll with a small branch attached to it, and then pressing the leaves between plain surfaces, the pod itself being left free. Never omit labelling each specimen.

Summary.—The general requisites may be summed up as follows:—

A moist, warm, and even temperature, with abundance of water.

Quick cultivation.

Avoidance of strong or highly manured soil.

Avoidance of any sudden check to growth.

The use of two distinct descriptions of compost, and

The use of light soil as a general rule.—R. Trevor Clarke

Welton Park, Daventry.—(Cotton Supply Reporter.)

A GOSSIP ABOUT POTATOES.

(Concluded from page 100.)

According to the orthography of my native county of Suffolk, and the gentleman in "Barbox Brothers," "I larff, I dew," when your famous Rose correspondents, after they have indulged themselves with swinging gallops upon their Potato hobbies, come to recommend a quiet jog-trot with three or four kinds. Do you not think they would broadly smile if I were to study Roses for years, write long and lovingly about them, and then end with a trite moral—"But after all, Gloire de Dijon, and Climbing Devoniensis, for walls; Duc de Rohan, and Souvenir de Malmaison, with the old Cabbage, old Moss, and China Roses, thrown in for the open borders, are all that any one can in reality require in that way"?

Well, one of our best judges and cultivators of the Potato who lives near Dorking, and who exhibited store Potatoes next to mine at the Great Show last May, is also going to send me sorts that I have not in my category, but which have gained his good opinion. Also, my friend, Mr. Wm. Cruickshanks, of Langleybury, promises to send me "Transell's Seedling," a sort he thinks highly of. I have long desired to try it. Mr. Cruickshanks formerly sent me the Pebble White, an excellent sort of the Lapstone family, and rather later than the original, though equal to it, and it will keep longer.

Practice proves to me that there are many kinds of excellent Potatoes which can be produced good in almost any soil, whilst there are many other equally excellent kinds that require one particular kind of soil to bring out their qualities. It appears to me we are but just stepping on to the threshold of this knowledge, and the more we search into it the more we shall have to acknowledge we have very much to learn.

Out of at least one hundred varieties of Potatoes under experiment during a period of thirty years, I can, in the spirit of the paragraph above, recommend the kinds which I exhibited at the Royal Horticultural Society's Gardens, South Kensington, last November. They are described in a report styled "Home Growths," at page 386, No. 295, first taking the precaution to

strike out of that list the sorts which are newest to me, or upon which I have not sufficiently experimented—namely, Webb's Telegraph, Premier, Royal Ash-leaf, Early Emperor, Fenn's Onwards, Russet Kidney, Beehive, and Wheeler's Milky White. The last I prophesy will become one of the most generally-grown sorts. I had a fine dish of it at the show, but it and the Lapstone were accidentally left out in the report.

The following sorts I should say can be grown good upon every description of soil unless the land is very stiff or wet, and even then the cultivation of the kinds can be carried out with success on the ridge-and-trench plan, such as I adopt in this garden, and have frequently stated. An account of it will be found at page 351, No. 163, Vol. VI., and it is advised for field culture, in Vol. IV., page 148, No. 100. I would respectfully refer Mr. James Dobbie and Mr. D. Thomson to those papers, where they will see how very slightly I differ from them in their good practice, which they have lately described in these pages. I do not feel quite so sure as Mr. Thomson, however, whether the ridge system would not be found to answer, if the sets were planted 8 inches deep in February, so as to allow their roots to take an early hold of the soil in the ridges, even should it be of a light, sandy nature. The tubers would certainly have a greater depth and bulk of soil to grow in, and I find these ridges of earth maintain moisture to a great extent in long-continued very dry weather. Besides, a double surface of soil is gained for the beneficial influence of atmospheric action, always so congenial to the well-doing of Potatoes during their growth. I never, however, tried or recommended this ridge system for light, sandy soils, nor have I the chance to try it in this neighbourhood, where the land varies in character from clay to loam, and from stonebrash to gravelbrash. The cottagers' allotments here are chiefly situated upon the latter description of soils, and there I prove the effects of change of staple upon the sorts, and so procure my seed from ground of a texture as opposite as possible to that of our garden. I was thus soon enabled to find out that all coarse-topping Potatoes are more suitable for cottagers on poor land, or for field cultivation, than the meagre finer-foliaged sorts. Starvation of the root is made up for in a great measure by the multiplication of mouths in the leaves feasting on the carbonic acid in the air. The smaller the top the richer should be the soil, and *vice versâ*; I find most of the coarse-foliaged Potatoes that I have introduced maintain themselves amongst the allotment-holders, but the finer sorts soon become lost with them.

I will now confine myself to my doings in this garden. The first quarter of April had passed away before I planted the varieties above mentioned, and the following:—For frame or early garden culture, Shutford Seedling, Early Ten-week, Hogg's Coldstream Early, White-blossom Ashleaf, and Mitchell's Early Albion Kidney; for the garden, or upon good hearty soil, two or three early sorts, Daintree's Seedling (round), Daintree's Seedling (kidney), Haigh's Kidney, Fortyfold, Pebble White, and Lapstone; for the farm, or upon rather poor and light soil, Sutton's Finest Regent, Cheshire Pink-eye, York Regent, Walker's Scotch Regent, Freebearer, Prolific, Negro, White Farmer, Fluke, Gryffe Castle Seedling, and British Queen (kidney).

The haulm of the first early sorts began to turn yellow about equally, excepting Webb's Telegraph; this variety lagged sadly behind—so much so, that upon the exhibition table I placed it among the second early kinds. Coldstream Early here again was first for economical household use, Shutford Seedling and Mitchell's running it very closely; so, also, did the Ten-week and Premier, but I durst not encroach upon their limited quantities.

Amongst the second earlies the foliage of Royal Ashleaf and Daintree's Seedling (round), first began to turn yellow; then that of Pebble White and Wheeler's Milky White—indeed, so long was the latter with me before its dwarfish, handsome, dark pea-green foliage began to take the yellow tinge, that I questioned whether I ought to call it a second early

For the later sorts Early Emperor was first yellow in the foliage, closely followed by Walker's Regent and Gryffe Castle Seedling, neck and neck; the rest were nowhere, at least in regard to the ripening of the leaves, for at the beginning of September the disease began to strike the foliage with blackness. On the 10th of August my friend, Mr. J. Gardner, who stated the history of Premier Potato at page 483, No. 300, wrote to me stating it would afford him great pleasure to come and see my Potatoes. I answered, "Come quickly, as I have lately observed some spots on the leaves, and I seem to scent the disease in the air; should it increase, it would set me to haymaking the haulm, and then a most interesting feature to the amateur would be lost, as no judgment could be formed of the differences in the foliage of varieties in their natural habits of growth." My friend took me at my word, and I believe we both found the day of his visit by far too short. I have often been led to think since reading in No. 282, page 147, about the Dunoon gentleman, "who preferred the useful to the ornamental, and had turned his front garden into one vast Potato-bed!"—that my friend must have carried away with him from here some such an impression of me as that expressed by "G."

The unfortunate year 1866 will certainly be marked with black letters by the majority of Potato-growers, in this vicinity especially. Some of my neighbours lost almost their entire crops; with me the leaves of the Early Emperor were the first to become spotted, on the 8th of August, and by the beginning of September the foliage of the whole Potato tribe had succumbed. The electric state of the atmosphere, with the prevailing rains, kept me haymaking at the haulm when the sun shone for a few hours consecutively. I explained the nature of this proceeding in 1865, in No. 246, and I again derived great benefit from the operation last year. Anticipating much trampling in the trenches between the ridges, I did not plant any of the Cabbage tribe in the trenches; and, contrary to my custom, I determined experimentally to leave all the Potatoes in their ridges, allow the disease to do its worst upon them, and so find out the sorts most capable of resisting it.

From the 22nd to the 27th of September the "lifting" took place, and I had to reckon my loss from the disease altogether at nearly one-third, which I could afford to spare, as I never remember a finer crop. Judging the early and late kinds together, I computed them at quite 16 tons per acre, and they are finer for flavour than I ever knew them off this soil. This serves to confirm the soundness of Mr. Radclyffe's advice about leaving in the ground Potatoes intended for culinary purposes till they are quite ripe; and, as Mr. Thomson expressed it about his "Ross's Potato," my Gryffe Castle Seedling, when being taken up, literally covered the ground. Let an extract from a letter one of the Editors wrote me vouch for the rest:—"What a very interesting collection was yours in the South Kensington Conservatory last week! I never saw so large a collection of well-grown, perfect, and useful-sized Potatoes." Old Betty—I beg pardon—the Early Ten-week, did not produce a diseased tuber, though more of the Premier succumbed than I liked to spare. The crop of Webb's Telegraph was nearly all diseased, I but just managed to save a dish of it fit to show. The murrain as it struck the other early kinds was nothing to cause me regret.

Of the second early kinds Royal Ashleaf stood best, and with a fine yield; of Beehive three-fourths of the crop were rotten. The third worst in this list was Wheeler's Milky White, of which I lost quite one-half; but a Fluke-looking seedling of mine, which I thought much of, gave way altogether. Of the Onwards, the female servants said they counted about one in seven bad, as they cleaned them for cooking; say one-third in quantity for the rest. Of the field sorts, Cheshire Pink-eye was quite free of disease, and Gryffe Castle Seedling nearly exempt from it; but of the Early Emperor I only just saved the plate of shabby tubers I exhibited at South Kensington. The Negro, also, was dreadfully cut up, and, in fact, all the coloured kinds were, or afterwards became, much more diseased than the whites. I am happy to say, however, that the seed Potatoes which I greened upon the ground have kept well, which, according to your correspondents, seems to be an unusual circumstance.

I think I have now done and said, all that I could, or can do usefully towards helping to assist others, by unfolding my last season's Potato enterprise. I trust I shall not be likened to the rat, preaching from his pulpit of cheese, when I say that we partake of the produce both boiled and baked daily, and we are well provided with store Potatoes till young ones come again.

Your subscribers in this neighbourhood have been into the store cellar to view my crop, and especially the member for this borough, who seemed to admire them for size and quantity, given the space of the ground. I show visitors the ridges and trenches, how the ground is well drained, the earth closets, and the house-sewage tanks; and, as Beau Brummel exclaimed formerly of starch, I explain the earth closets form "the man!" Still, as our medical doctor said to me the other day, when he came to request a view of our hygeian system of earth closets,

&c., "Manure will never bring satisfactory produce without a quantum of science, and the combination of practical knowledge how to apply it."

I will conclude this paper in agreement with your (and I feel proud to add my), excellent correspondent "SOLANUM," at page 6. When "science and practice are alike baffled we must bow to that which no man can comprehend, the will of the great Ruler of All." In the meantime, I will add, let us fulfil to the best of our power, that extra degree of exertion which Providence for wise purposes has entailed upon us.—UPWARDS AND ONWARDS.

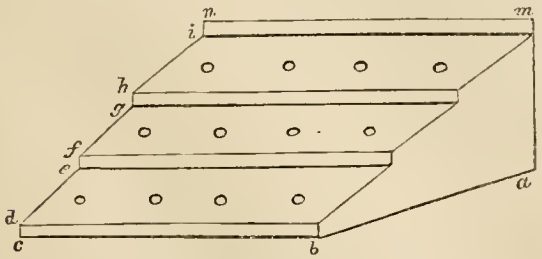
NOTES OF AND ABOUT ROSES.

(*Continued from page* 84.)

THE rules to be observed by exhibitors, and for the guidance of judges, should be strictly adhered to. Some of the rules laid down never have been conformed to; the size and forms of the boxes or stands are noticeable instances of this. A glance along the exhibition-table reveals some curious discrepancies in this respect, reminding one of the older streets of London, where the proprietor of each house built according to the design his fancy or convenience suggested. Eighteen inches is the usually required width of a stand, the height in front 4 inches, and at back 6 inches; but stands of different dimensions from these are placed on the table, and propped up behind to any height. These stands are also directed to be painted green, and surfaced with green moss; but the wear and tear, chiefly arising from conveyance over long distances to and from the places of exhibition, and the scratching and rubbing to which they are always liable, make them look anything but green, or any other colour that is respectable. As for the moss, it has as frequently the appearance of a door mat picked to pieces, as of the verdant colour intended.

We should not quibble about trifles. I will assume that the boxes were made prior to the rule, and the owners not unreasonably refused to alter or to have new stands made in compliance. Green moss cannot be obtained everywhere, and the managers of the exhibitions have yielded to the logic of facts.

In the course of time unjustifiable divergencies have crept in. If one party complies with a rule laid down for judges and exhibitors, and another diverges from it, be the divergence ever so trifling, the conforming party is not to be blamed for noticing it. For instance, if the rule states, as it does in the Crystal Palace schedule, that the truss must be shown with its bud and leaves as cut from the tree, *any addition, even of a leaf, will disqualify*, the last clause being in italics, is it a violation of the rule if, supposing no leaf or anything pertaining to a Rose be added, the flower is tied neatly to a stick to keep it in place, or to give a uniformity of appearance to the collection in the box? Different kinds have different habits. Senateur Vaisse, Pierre Notting, and some others of our best Roses do not hold themselves up so erect as the stately Comtesse de Chabrillant and Duchesse d'Orleans, and most Tea Roses are a little pendulous under these circumstances. Is an exhibitor justified in giving the aid of a pair of crutches to put them in an unnatural position, in order to make them stand out stiff and erect like others that have that habit naturally? It would be well if the rule were made distinct on this point. I refrain from further remarks on this subject, for it is not pleasant to be detecting others' faults.



a b, Width 18 inches. *b c*, length 24 inches. *a m*, height 12 inches. *c d*, height in front 3 inches. *e f*, *g h*, each 3 inches, the height between each ledge or flat. *i n*, 3 inches, forming a back to the upper ledge. *d e*, *f g*, *h i*, each 6 inches, minus the thickness of *e f*, *g h*, the width of the ledges.

I never did like the boxes or stands at present in use; the long line of these unsightly objects on the exhibition-table excites a feeling that ill-usage is designed to the Queen of Flowers by the shutting-up and then exposing her in a clumsy expedient unworthy of her. Something might be done to improve this state of things. I have not the good fortune to possess any inventive faculty, but by way of a practical hint I have ventured to give a rough outline of a stand for twelve, which is free from some of the objections attending the stands at present in use.

As the sketch indicates, the stand consists of three flats or ledges, each pierced with four holes for the insertion not of zinc tubes, but of glass phials, which are to rest on a strip of wood beneath the holes, so that the rim of each phial may project at least 1 inch above the ledge; this will allow the stem and foliage of each flower to be seen clearly and to advantage. No moss should be allowed, and the judges as well as the spectators will see the truss or flower as cut from the tree in its integrity. There is nothing better for setting off a Rose than its own foliage, which varies in different kinds, and in many of them is of itself beautiful. Some method of exhibiting like the above will bring out this point far more clearly than the boxes at present in use. For convenience in carrying flowers to exhibitions, the stand may be fitted into a box or case of rough boards, or otherwise, that while holding the flowers as safely as the ordinary box, it can be taken out of its case to be placed on the exhibition-table without being disfigured or scratched during conveyance. Nor will the stand, together with the case containing it, occupy much more space, or be much more expensive in construction, than those now in use. On the exhibition-table this kind of stand will afford the judges and visitors a more distinct view of the flowers placed in it, and when the attendance is expected to be large, there will be an advantage rather than otherwise, in not placing the stands too closely together.

In showing a large number of cut flowers in single specimens there must be a kind of monotony in the general appearance of the exhibition, and the suggestion now offered would not tend to diminish it. Will correspondents kindly give their views on the subject, and improve upon the hints now thrown out?—ADOLPHUS H. KENT.

THE INTENSE COLD AND ITS CONSEQUENCES.

STORNOWAY, SCOTLAND.—You may like to hear how we have fared in our latitude of 58° N. during the severe snowstorm of last month. The snow and frost were quite unprecedented. The readings of the minimum thermometer, protected in the shade, and 4 feet above the ground, on the coldest nights were —January 2nd, 23°: 5th, 18°; 6th, 20°; 7th, 30°; 12th, 19°; 13th, 21°; the rest of the month they varied from 25° to 43°.

Thanks to the influence of the gulf stream, the injury to plants and shrubs is not so great as one would have expected. Some plants of Rhododendron ponticum, Laurels, Portugal Laurels, and Escallonias in exposed places have the last-made shoots much browned. Gaultheria shallon and Garrya elliptica in a high exposed place have not been touched. Single Red Camellias were much browned, also some Golden Holly. Berberis intermedia and Darwinii have not been touched, also Ribes speciosum. Common Fuchsias in the shrubbery and plantations are unhurt, except at the points of the shoots. Roses have not been much affected. Some of the Cabbages and Broccolis have been injured; also Globe Artichokes. Catkins of Hazel, Alder, Cut-leaved Alder, and Black Willow, though very forward in December, do not seem to be at all affected. The Hybrid Rhododendrons are not injured, and seem to be less tender than R. ponticum, owing, no doubt, to the latter making a third growth late in November and December. Crocuses, Snowdrops, and mixed Tulips are making rapid growth. Ribes sanguineum is very forward in bud; Primroses, Hepatica, and Polyanthus are in flower.—JAMES MATHESON.

WELTON, NEAR DAVENTRY.—We have escaped almost unscathed by the frost at Welton. The only evergreen touched here has been Cratægus crenulata on a south wall; even this is only browned. All Broccoli, however, is killed.—R. T. CLARKE, *Welton Place*.

BANFFSHIRE.—This place is seven miles inland from the town of Banff, and is in 57° 35′ N. latitude. The situation is damp, being only about 6 feet above the level of the river Deveron. I can scarcely tell yet to what extent Roses and evergreens are damaged, as we had about 26 inches of snow on the ground when we had the most severe frost in January. On the 5th the lowest temperature was 2°, and on the 21st and 22nd 1° below zero.—J. C.

Monmouth.—January 19th and 20th, 4° at 7 A.M. The vegetables here have suffered much; Broccoli has all been killed; Cabbage plants, Leeks, and Spinach are all dead down to the snow line. Rose trees appear to be all killed, excepting a few hardy sorts. Shrubs have not been in the least injured. —H. Comley, *The Gardens, Hendre.*

Keswick, Cumberland.—I live in one of the cosiest nooks in England, just at the foot of the giant Skiddaw, and surrounded by his brethren of greater and less stature, truly a numerous family. The frosts found their way even here over the tops of the hills, and 25° below freezing was the minimum temperature registered. It has done us somewhat extensive damage; not a Broccoli is left of one of the finest squares I have seen this season. Rhododendrons have suffered much, in common with Portugal and common Laurels, whilst the Laurustinuses are entirely gone to the snow line. Roses seem to have stood well, but how it may go with the flowering, time alone can decide.—J. V.

Upper East Sheen, Surrey. — To confine myself as much as possible to Roses: they are more extensively killed and wounded than ever came under my notice. Hybrid Perpetuals Monte Christo, Mrs. Charles Wood, Cardinal Patrizzi, are more or less seriously hurt. Bourbons Pierre de St. Cyr, Julie de Fontenelle, and Empress Eugénie, are destroyed. Noisette Fellenberg is dead, Du Luxembourg much injured, Lamarque nearly dead, Isabella Gray dead, Rivers's Augusta dead, Jean d'Arc dead, Triomphe de Rennes dead. Bourbon Souvenir de la Malmaison is hurt. Tea China Louise de Savoie, Madame Willermoz, Madame Falcot, and Niphetos are dead, Vicomtesse de Cazes injured only, Madame Damaizin dead. China, Common a good deal hurt, Mrs. Bosanquet dead. Amongst old favourites uninjured are Narcisse, Ophirie, Auguste Vacher, and Noisette La Biche; all without protection. Of evergreens, Sweet Bays, Gold and Silver Hollies, Deodars, Laurustinus, and Pinus insignis are all a good deal punished, but less severely so than on the lower level. Other Conifers and shrubs are uninjured. The lowest temperature was during the night of January 4th, when it was 3° below zero.—Charles Ellis.

MR. ROBERT DICK.

Scotland has lost a son of whom she may be justly proud, and science has to mourn one of her most devoted students; and yet we have only to chronicle the death of a poor baker of Thurso, who was considered mad by some, who died in penury, and was not followed to the grave by a single relative. Mr. Robert Dick, who was better known in scientific circles in London than among his own townsmen, has passed away. He was, perhaps, the most enthusiastic amateur in botany, entomology, and geology of our own time. Hugh Miller gained many a lesson from him, and even Sir Roderick Murchison was proud to admit that he had gleaned information from the baker of Thurso. His devotion to his scientific pursuits was so great that he neglected his business, and the inevitable result ensued. Shall I then hold him up as a pattern to our younger readers? Most assuredly. While studying the virtues of a man, we may also learn to avoid his mistakes. No one with any common sense would take up the study of science with the idea of making a fortune by it. As I have said more than once, the love of science must, like virtue, be its own reward. There are many things which cannot be computed on the £ *s. d.* scale—health, for instance, or happiness. Do you for a moment suppose that in his latest hours Mr. Dick wished that his life had been passed without the slightest acquaintance with the plants, insects, and fossils he had spent so many days and nights in studying? No; I firmly believe that he had more pleasure in the span of life allowed him than any millionaire. I know many scientific men whose income is £500 or £600 a-year at least, who are as poor as he was. If their income were doubled to-morrow, they would spend every farthing in the pursuit of their favourite science. Two of the leading men in their several branches, who have died within the last few years, have left their widows so poor that they were obliged to seek a means of living for themselves.

I did not know Mr. Dick personally—there were not many men who did; but from what I have heard of him, I should think he was somewhat eccentric, and decidedly reserved and uncommunicative in his manners. Many such men there are, unfortunately; they find few capable of conversing with them on their favourite subjects, and so by degrees learn to shun society, and keep their knowledge stored up in its perishable casket. This is a great and fatal mistake. A man ought to enjoy the keenest pleasure in conveying to others the knowledge he has himself acquired. And yet I grieve to say that I have met several men who were strangers to this better feeling. When first I took up the study of Ferns, I asked many questions of one of the best cultivators of this tribe in his time, and always obtained an answer to the effect: "Ah, lad, it cost me money to learn that." I have lived long enough to see him left far behind in his acquaintance with these plants by many to whom he refused to give a single idea to help them on their course. The man at whose feet I learned first to trace out the characters in which the history of our globe is written on the stony pages of its own crust, was in some respects not unlike Mr Dick. Although very reserved, so devoted to science as to neglect his own business, and so uncommunicative that he could never rise to his proper position in the world (and, as a matter of course, the world did not know what his proper position was), yet I never shall forget how perseveringly he led myself and a fellow-apprentice on, teaching us to glean our own facts in the great field of nature, and showing us gradually how one fact led us on to another. I often think of how the good old man taught us to learn the lessons which the poor broken scraps of fossils we found at first could teach; nor shall I forget the joy with which he picked out a fossil Nautilus, almost unique, which we brought back from one of our scientific rambles among the hills. But the dear old man would hardly open his mouth to any one who could not converse with him on his favourite studies. Had the case been otherwise, he might have risen to some considerable eminence. While I would caution any youthful aspirant against the belief that a fortune is to be obtained by a study of science, I should fall into as great an error on the other hand, if I did not strongly urge one and all to devote themselves to it as energetically as they can: first, because of the pleasure it will give them; secondly, because it will assist them in their business, by enabling them to understand the *rationale* of the operations they are hourly called upon to perform. The engineer in 'Mugby Junction' says, "It's almost as good as being clever, to be fond of your business;" this is true enough, and no man will ever make a good gardener, or rise to any prominent position among his brethren, unless he be really fond of his business.—(*The Gardener.*)

NOTES AND GLEANINGS.

We have heard with no ordinary feelings of regret that Captain Cockerell has sent in his resignation to the Council as Assistant Secretary of the Royal Horticultural Society. All who have known Captain Cockerell, and those who have been brought into communication with him, can testify to the uniform kindness and courtesy he has always exhibited in the execution of his official duties; and those only who have had experience of the official management of the Society in former years, with the exception of the period when Mr. Booth so well filled the same situation, can fully appreciate Captain Cockerell's kindliness of manner, obliging disposition, and gentlemanly bearing.

—— Every one interested in the culture of Orchids will especially regret to hear of the death of Mr. George Ure Skinner. Although occupied by commercial pursuits, being one of the firm of Klee, Skinner, & Co., of Guatemala, yet he found time to pursue his favourite researches in natural history. His residence in Central America probably led him to the particular study of Orchids, with which the forests of the district abound, and with them his name is now thoroughly associated. For about thirty years we have known him engaged in their collection, and some one of their genera should do honour to his name. Cattleya Skinneri is a minor remembrance of him. One genus, worthy of him, records two of his names, but it belongs to the Natural Order Scrophulariaceæ. We refer to *Uroskinnera spectabilis*, thus mentioned by the late Dr. Lindley:— "For this beautiful plant our gardens are indebted to G. U. Skinner, Esq., the most generous of merchants, the most eager of collectors, to whom or to whose assistance the botany of Western Mexico and Guatemala owes more than to all the travellers who have visited those regions. Nothing more worthy of his name could well be found, for the plant is very rare, very showy, and now secured to our gardens; we therefore trust that verbal pedants will not quarrel with the manner we have contrived to escape from the difficulty of there being already a *Skinneria* in the botanical field, but agree with us that Ure Skinner may be fairly blended into a name which shall unmistakably record the labours of one who ought never to be con-

founded with any other Skinner whatever." He died of yellow fever on the 9th of January at Aspinwall, Isthmus of Panama, at the age of 62; and it adds painfully to the feeling for his loss to know that he was journeying to Guatemala to complete arrangements for retiring from the firm, preparatory to taking up his residence in England permanently.

He was a native of Scotland, and his father, the Very Rev. John Skinner, was Dean of Dunkeld and Dunblane, who died at Forfar in 1841, and who was son of Bishop Skinner, Primus of the Episcopal Church of Scotland. The Bishop, we believe, wrote the well-known "Reel of Tullochgorum."

Mr. Skinner, whose death we now record, was not only a Fellow of the Linnean and other kindred Societies, but was ever ready by his counsel and his purse to aid others who were pursuing the sciences those Societies fostered. He advised with Hartweg as to the latter's researches in Mexico; and he supplied Warscewicz with money at the time of his extreme need, when he had been abandoned by the Belgian Association, which had sent him to South America to collect plants.

WORK FOR THE WEEK.

KITCHEN GARDEN.

See to the due preparation of ground for crops in general, but beware of carrying on these operations when the soil is in a wet state, better be a fortnight too late with any crop. I am of opinion that where kitchen gardens are composed of light soil, it is better dug or trenched some weeks before it is wanted for some crops, especially Broad Beans, which like a firm hold of the soil. A small plantation of Marshall's Dwarf Prolific or of Mazagan *Beans* may be made as soon as the weather is favourable for the operation. *Peas*, when the first sowing is coming through the ground it will be advisable to draw a little earth to the plants. In the case of mice attacking them, there is, perhaps, no better remedy than trapping; the old figure-4 traps, a number of which can soon be made, are as good as any. Those who have not already sown Peas may make a sowing of any good early sort in the warmest part of the garden, on the first favourable opportunity. Take care, however, that the ground be previously dug to a good depth, or trenched, and in tolerably good heart. As Peas sown at this period of the year, especially in clayey soils, are liable to rot if buried too deeply, do not cover them more than 2 inches. *Parsnips*, sow as soon as possible. The ground should be trenched and manured in the autumn. Sow in shallow drills 18 inches apart. *Tomatoes*, sow in heat directly; also, *Sweet Basil*, *Sweet Marjoram*, *&c.* *Sea-kale* and *Rhubarb* for next year's forcing should be planted immediately in rich trenched ground. Throw a hillock of old tan, ashes, or sand, round each crown to coax it on through the vicissitudes of March and April. Where water is apt to stand on the surface through the puddling properties of heavy rains, try to improve the texture by a dressing of sand, ashes, lime rubbish, charcoal dust, &c.

FRUIT GARDEN.

Remember to drain thoroughly. Nowhere is this advice more necessary than in the orchard. Although Apples and Pears are fond of adhesive soils, they will never prove profitable where water is allowed to accumulate. Thin-pruning is also of great use to Apples which are rather free setters; it is likewise of great service to varieties of the Nonpareil class to enable them to perfect both fruit and wood. The stems of fruit trees on which moss or the hiding-places of insects are apparent should be cleansed. For this purpose brushes varying in stiffness according to the hardness of the bark should be employed. Those made of brass or iron wire will be found well adapted for scrubbing old crusted bark. The scale may be dislodged to a great extent by such means, and the bark freed from myriads of parasites, animal and vegetable, which prey upon its substance and render it unsound and unsightly. Moist weather facilitates the operation. Prepare clay for grafting, by mixing it with a portion of cowdung and a little fine hay. The pruning of wall trees on south aspects should be completed as soon as possible. In this climate every bearing shoot of the Peach and Nectarine requires to be shortened, otherwise a sufficient supply of young wood for future bearing cannot be insured; but if this has not been done there may be some difficulty, in consequence of these shoots having formed no wood-buds, except, of course, the terminal bud. In that case it will not be acting too severely to cut back at least every other shoot so fully studded with blossom-buds to within half an inch of the base, in order that from thence better shoots may spring, for after this reduction the number of blossom-buds left will, doubtless, be ten times greater than the number of fruit which the tree ought to bear.

FLOWER GARDEN.

Improve as much as possible all outlines. Plant fresh masses or groups when necessary, and introduce specimen plants when fitting opportunities offer. Much mischief is done by planting single specimens in recesses. These should be carefully preserved as a general rule, to give deep shadows and to throw the prominent features into bold relief. Top-dress Auriculas, delay it not while the weather is fine. Remove early blooms, and if any plants look sickly examine the roots; if from canker, apply the knife; and if from inefficient drainage, put more into the pot, if possible, without breaking the ball of soil. Tulips are coming forward, shade carefully from frosts and cutting winds. Continue to watch for leaves that are cankered, and remove them as soon as perceived. Top-dress the beds of Pansies with decayed leaves and manure from the Melon-pits reduced to a black unctuous compost; peg down or remove all straggling shoots, and place bran under tiles as a decoy for snails, &c., which will now, on mild nights, begin to be troublesome.

GREENHOUSE AND CONSERVATORY.

It is somewhat difficult to give directions in a successful way for mixed greenhouses. Plants of all climates will occasionally obtain a place there; and as no special treatment in regard to temperature may be long indulged in with impunity as to the plants from warm countries, a compromise of some kind must continually take place. As a principle, therefore, of frequent and somewhat harmless application, a rather free increase of heat should be allowed on sunny days early in the afternoon for a few hours, letting the temperature sink at night to the old point, or nearly so. In this structure there will frequently be found Ericas, Pelargoniums, New Holland plants, bulbs, &c., and even Orchids. We would, therefore, advise a division of these families; let the Orchids, bulbs, and plants of hot climates occupy the hottest end with little air, and the Ericas the other with a free circulation of air; the Pelargoniums may stand midway. The conservatory should now be of great interest. Any Camellias done blooming should, if possible, be removed forthwith to some of the houses at work; a moist atmosphere, a temperature averaging 65°, and a canvas shading overhead, are the requisites in order to cause them to produce wood freely and large leaves; the shading must by no means be neglected. The climbers in this structure should have a thorough dressing at this period, cutting away weak and decayed wood, and shortening back shoots. As a general rule, plants in flower require more water than those not in flower; it is not intended that they require to be deluged with water, but they should be very carefully and regularly supplied, or possibly the bloom of many plants will fall off prematurely. Again, they must not be exposed to currents of air; these, indeed, should not be admitted in any situation where exotic plants are kept at this time of the year, for they have no other effect than that of paralysing the vital action of the plants within their influence, and, therefore, while they are hurtful to all plants and flowers, they are especially so to such as have been produced in a close warm atmosphere. Again, the decayed and decaying flowers must be sedulously removed: this is necessary, no less on account of neatness and order, than for the purpose of preventing the injury or decay of the undeveloped flowers, which would be liable to injury by contact with those which were in a state of decomposition.

STOVE.

Some little increase of temperature may now take place here, and that chiefly, as before observed, in the afternoon by shutting up early and using plenty of moisture, taking care to thoroughly dry the foliage previously by a free circulation of air. Look over the fastenings of Orchids on blocks or in baskets, renew the wires where necessary. Fasten a little fresh material on those not to be shifted, but beware of burying the buds on the eve of their becoming developed. Apply baits for snails and cockroaches most assiduously, and attend closely to the extirpation of all scale. Examine and shift when necessary stove plants in general, and cut back some of the kinds after flowering to make cuttings.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

With heavy rains and boisterous winds the weather has still been favourable for much out-door work, and where the ground

was light much could have been done in Bean-planting and Pea-sowing. For reasons several times given, we prefer planting out the earliest crops, and last season having no small wire guards we planted out nearly the whole of our crops. The routine as regards digging, trenching, and forward vegetables was much the same as detailed last week.

Collecting Leaves after the shooting season formed a part of our work, and we have been unfortunate this year and last. Both before and after that time the excessively high winds took off the leaves into the surrounding country, and what are left, owing to the heavy rains, are very wet, entailing, if thus collected, two disadvantages: the first, the great additional weight which has to be carted; and the second, the necessity of using them sooner, as there are no means that can be well used for preventing heaps of such leaves from fermenting and gradually decomposing. Under such circumstances leaves are vastly more expensive for heating-purposes than stable-dung when it can be procured in good quantities. The leaves, however, have these two advantages: they need but little preparation for being used as hotbeds, and then, when reduced to leaf mould, they are very useful as a component part of many of our composts. When leaves can be collected and stored in a dry state they will keep as long as it is desired without fermenting, but then we can always obtain heat from them by moistening them sufficiently to cause fermentation and consequent slow decomposition. For general matters see previous week's notices.

FRUIT GARDEN.

We previously mentioned throwing thin limewash over our Gooseberries, Currants, and dwarf bush Pears, Plums, &c.; hitherto it has been successful in keeping the birds from the buds, and we should like to repeat the process, especially on Pears, as the buds are swelling fast, and the recent storms have washed off the most of the lime. It still adheres pretty well to the Gooseberries as their shoots were less exposed, from being drawn pretty closely together in the bush faggot style. The intention is to remove the string and allow the bush to take its more natural position after the buds have fairly broken, as when in leaf the birds will cease to molest them. Whilst thus tied it is also easier to scrape away the soil from round the base of all the bushes, draw it into the space between the rows, and dig down that soil deeply there, whilst fresh soil is placed round the bushes, and the ground near the stems is merely forked over thinly. If there should be any products of caterpillars from last season, the digging them down deeply will generally destroy them. From this simple plan we are seldom troubled with the caterpillar. Were we near a tan pit we would put two or three spadesful of tan round each bush, as that seems to destroy all eggs and larvæ, at least when we could adopt that plan we were never troubled with caterpillars; but the fact would require to be more generally confirmed before we were thoroughly certain that the tan and the absence of the caterpillar were established as cause and consequence. It is possible for us at times to think we see the connection between results and causes, when in reality there may often be merely coincidence. As to the caterpillar that in fine summers is so apt to attack all the Brassica tribe, we know of no preventive equal to hunting down the white butterfly by a couple of sharp boys, spurred on by the desire of boxing the greatest number.

Raspberries.—We have tried almost every mode of training these—such as so many canes fastened to a stake, these stakes from 2 to 4 feet apart; tying them into the form of arches, either with a stake or without stakes, the canes when interlaced supporting themselves; but of late years we have generally fastened the canes in rows about 6 inches apart, the weaker ones being early cut away to give more room, sun, and air to those left. Of course we think this system the best on the whole, though the other plans have also much in their favour. On the line or row plan the plantation if in one place consists of rows about 5 feet apart, wooden stakes are placed along the row 4 or 5 feet apart, and on these light rods or saplings are fastened, one line about 15 inches from the ground, and the other about 3½ feet from it, and to these the canes are tied. This is the simplest mode of carrying out the line or row system; but as a Raspberry plantation will last in good order for a number of years, the best and the most economical mode in the end for training Raspberries on this plan is to have a few slight iron posts, and have three strained wires for fastening the canes to them, and then at all times the Raspberry plantation will look neat and handsome, which it frequently does not with our makeshift modes of management. Even when this appears, we shall not be more than in the middle of the month, and since the storm fruit trees of all kinds seem to be earlier than usual, many buds already becoming very prominent. Can this be owing to the heavy warm rains before the severe frosts, or to the rather warm rains that have fallen since? Singularly enough, too, we notice that the dull wet summer and autumn of 1866 have not done much in lessening the quantity of fruit-buds on fruit trees in general.

For orchard-houses, Peach-house, Strawberries, &c., see notices of previous weeks. Some time ago we put a little warm litter on the border of the first vinery, placing the cold litter that had been put there in the autumn on the surface, and protecting it from heavy rains. As soon as we have the material we will treat the second in the same way. The heat given off there, if at all sensible, will be used for forwarding many things in the early season by placing some old sashes over the border. If the temperature for forcing-houses is raised very gradually, and the atmosphere kept tolerably moist by damping the floor, stages, &c., there will be less necessity for syringing the trees so much as is generally done. We have come to the conclusion that this sprinkling, so often repeated, has little or no influence on the regular breaking of Vines, and we first began to find this out from the unwillingness to wet the leaves of plants beneath the Vines, when the plants were of such a nature, or in such a condition, that we would have preferred the foliage to be dry in sunshine.

ORNAMENTAL DEPARTMENT.

When the weather would permit, slightly rolled the lawn to keep wormcasts out of sight, and dug and ridged the centres of large beds and borders, leaving the sides near the turf for drier and better weather, when making up edgings. Even with a board at the grass edgings it would scarcely be possible for the men to trample on the grass near the beds without injuring it; and as a general rule it is best to avoid doing work in such times and ways as will be sure to make work, when better arrangements would render the most of that extra work unnecessary.

Pansies, Pinks, Carnations, &c., out of doors, will require firming about the plant after the frost, and to be protected from slugs and grass mice. Ranunculus and Polyanthus in a pit or frame will want all the air possible, without the rains, and to be top-dressed with rich, sweet compost. Violets, especially the Neapolitan, will want plenty of air in fine weather. As respects *Neapolitan Violets*, we did last season what we will most likely never do again—left some lights that were planted in the autumn of 1865, but without lights last season until the autumn, and though they looked nice, they do not produce as yet so freely as younger plants, yet they seem to have plenty of buds on them. What we consider the best and the easiest way to obtain fine-flowering plants of the Neapolitan, is the following—About May, take up the old plants; tear them into pieces, so as to have roots to each separate piece; trim the roots, if more than 2½ inches long; prepare a piece of ground by digging, and manuring with sandy loam and leaf mould; plant the pieces from 6 to 8 inches apart; stir the soil, keep clean, water as needed, and above all, allow not a single runner to grow all the summer, and then in the autumn either set a frame or frames over the plants, or take up and plant in a bed to be covered with glass, and if wanted particularly in bad weather in winter, fill some seven-inch pots with good plants, and set them where they can have a mild bottom heat, and a cool, rather dry atmosphere. If mildew in autumn, or red spider in summer make their appearance, dust with sulphur, and use the syringe freely. No older plants will equal those thus annually renewed. All the other single and double blue and white Violets, are best when treated in a similar way, and should not stand more than two seasons in the same place, if the greatest produce in flowers is aimed at. Potting and regulating plants much the same as in previous weeks.

Storing Turf for Potting.—As soon as the weather is dry we must see to this work, but it is often difficult to accomplish, and when short of turf, we generally contrive to obtain some good fresh soil from the ridges thrown up by the sides of highways and other roads, and which, consisting of the soil of the surrounding district, if that is at all loamy, and the ground flints and stones, makes a capital soil for the culture of most of our common pot plants; but even that we do not consider quite so good for the staple of the compost, as rich fibry turf that has stood in a narrow ridge for a twelvemonth, and has thus become sweetened. We feel obliged to Mr. Pearson for what he says and has done with fresh turf, and can bear out most of it, from what we have practised with certain turf for borders,

as well as for the bottom part of large pots, preferring more mellow soil for the surface, chiefly to have no trouble with the fresher causing a green surface. For general purposes of potting we prefer turf that has been taken up from six to twelve months, and has been piled in narrow stacks with air-vents through it. In such cases the fibre is but little reduced, the sour smell has disappeared, and the soil comes out dry, mellow, and sweet as a nut. For many commoner purposes, however, we would follow Mr. Pearson's example, if we obtained the right turf, and here we will give a test to the inexperienced, and Mr. Pearson will correct us if he do not coincide. Turf taken from upland pasture where the grass is of a bristly needle-like character, may be used at once, as the soil will generally be sweet beneath. We have often scarified the turf from such places—that is, taken it off as thin as possible, and used it for the bottom of large pots, and the fibry soil immediately beneath it for general potting purposes. Turf like this, however, cannot always be had, and we must often be content with what we can find. In lower levels the turf will often consist chiefly of grass, broad and softer in the leaf, having comparatively little fibre beneath it, and the soil though rich will often contain more acid—that is, smell unpleasant, and want more exposure before using it for particular purposes. This is far inferior for potting-purposes to the other, and, having more of a tendency to run closer together, needs something to keep it open. We often were amused when young, to see gardeners smelling their composts, but we have learned since that it is well to use the nose, as a test of the sweetness of soil for potting.

Furnaces under Boilers.—We will now offer a few remarks to meet the case of those who say their boilers and hot water are vastly more expensive as regards fuel than they were led to expect. Heating by hot water will always be more expensive in proportion to the little that is done by one furnace. Of course, when a dozen houses are heated from a dozen boilers there will be a greater escape of heat from a dozen chimnies than from one, two, or more. All that can be done, is to economise the heat, by keeping it as much round the boiler as possible. Lately, the mode of lighting a furnace was alluded to. Except when cleaning, lighting, and adding fuel, the furnace door should *never* be open. When the fire is fairly burning, the ash-pit door should be shut, leaving only a very small opening to admit air to reach the fuel through the bars. When the heat is well up, the damper should be put in, just allowing a slight opening to insure a slow draught. Even when a fire is about gone, a shut damper and close furnace and ash-pit doors will keep for a long time about the boiler heat which with a free draught would be dispersed quickly through the furnace, past the boiler, and up the chimney. It is by no means uncommon to find a damper right out, a chimney so hot that you can scarcely touch it, a huge red fire in the furnace, with the furnace-door open, so that the fire may give out plenty of heat to the stoke-hole, to the external air, and the little as it may be wanted to the boiler; and when fuel can be had for little more than the carriage, there may not be so much to be said, as a little less care and trouble will be necessary; but every such case of extra hot chimnies, open dampers, open furnace-doors, and huge fires not wanted, shows clearly that it is the system of the manager, and not the system of hot water that is mostly to be blamed for such waste of fuel.—R. F.

COVENT GARDEN MARKET.—February 13.

We have little or no alteration to report, having abundance of everything at present. Continental supplies are steady and good, and home-grown produce comprises the usual varieties in season at this period of the year.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes ..... each	0 6	to 0 8	Leeks ..... bunch	0 6	to 0 0
Asparagus .... bundle	6 0	10 0	Lettuce ..... per doz.	2 0	3 0
Beans, Kidney, per 100	3 0	4 0	Mushrooms .... pottle	1 0	2 0
Scarlet Run, ½ sieve	0 0	0 0	Mustd. & Cress, punnet	0 2	0 0
Beet, Red..... doz.	2 0	3 0	Onions.... per bushel	4 0	5 0
Broccoli ..... bundle	2 0	3 0	Parsley.....per sieve	4 0	6 0
Brus. Sprouts ½ sieve	3 6	0 0	Parsnips ..... doz.	0 9	1 3
Cabbage ..... doz.	2 0	3 0	Peas..... per quart	0 0	0 0
Capsicums..... 100	0 0	0 0	Potatoes ..... bushel	4 0	6 0
Carrots..... bunch	0 6	0 8	Kidney ..... do.	5 0	6 0
Cauliflower ..... doz.	4 0	8 0	Radishes doz. bunches	1 0	1 6
Celery ..... bundle	2 0	3 0	Rhubarb ..... bundle	0 9	1 6
Cucumbers..... each	1 0	2 0	Savoys ..... doz.	3 0	4 0
pickling .... doz.	0 0	0 0	Sea-kale ..... basket	2 0	3 0
Endive ..... doz.	2 0	0 0	Shallots ..... lb.	0 8	0 9
Fennel ..... bunch	0 3	0 0	Spinach ..... bushel	5 0	— 0
Garlic ..... lb.	0 8	1 0	Tomatoes.... per doz.	4 0	0 0
Herbs ..... bunch	0 3	0 0	Turnips ..... bunch	0 6	0 0
Horseradish .. bundle	4 0	6 0	Vegetable Marrows dz.	0 0	0 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .....½ sieve	2 0	to 3 0	Melons..... each	2 0	to 4 0
Apricots ..... doz	0 0	0 0	Nectarines ..... doz.	0 0	0 0
Cherries ..... lb.	0 0	0 0	Oranges 100	5 0	10 0
Chestnuts..... bush.	10 0	18 0	Peaches.....doz.	0 0	0 0
Currants..... ½ sieve	0 0	0 0	Pears (dessert) .. doz.	3 0	6 0
Black ..... do.	0 0	0 0	kitchen..... doz.	2 0	4 0
Figs ..... doz.	0 0	0 0	Pine Apples ..... lb.	4 0	8 0
Filberts.....lb.	0 0	0 0	Plums ..... ½ sieve	0 0	0 0
Cobs.....lb.	0 9	1 0	Quinces ..... doz.	0 0	0 0
Gooseberries .. quart	0 0	0 0	Raspberries.....lb.	0 0	0 0
Grapes, Hothouse..lb.	4 0	8 0	Strawberries ..... lb.	0 0	0 0
Lemons 100	5 0	10 0	Walnuts..... bush.	10 0	20 0

TRADE CATALOGUES RECEIVED.

W. Samson & Co., and W. & T. Samson, Kilmarnock, N.B.—*General Catalogue of Vegetable, Flower, and Field Seeds, Plants, &c.*

Drummond Brothers, 52, George Street, Edinburgh.—*Catalogue of Vegetable and Flower Seeds.*

John Foulds, Stretford New Road, Manchester.—*Catalogue of Plants and Cuttings of Chrysanthemums, Zonale Pelargoniums, and Bedding-out Plants.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Fig Culture (*J. F.*).—There is no work devoted to the subject. If you send five postage stamps with your address, you can have "Fruit Gardening for the Many," free by post from our office. It gives the necessary directions for Fig culture.

Wild Flowers (*Mrs. Rose*).—The work will be completed as soon as all the native plants have been figured.

Forcing Flowering Plants (*Dulcibella*).—Forcing flowers, fruits, and vegetables will be fully noticed in our pages before many weeks have passed.

Hays's Constant Stove (*J. R. Beyton*).—The 60s. one would be large enough to exclude frost from your small greenhouse. A bushel of the fuel would last a week. Common charcoal would not answer.

Growing Plants under Standard Roses (*An Amateur Rose Grower*).—Roses are jealous plants, and do not like any competitor close to their roots. They will in hot weather eat up any quantity of manure, and, drink up any quantity of water. Decayed manure covered with ashes is the best protection for their roots in hot weather. The ashes retain as well as attract moisture. If the querist wishes to put anything over the roots in the shape of flowers, Mignonette is the best, and gives a nice scent.—W. F. Radclyffe, *Okeford Fitzpaine.*

French Acclimatising Society (*J. B. B.*).—The address is, "To the Secretary, Jardin de la Société d'Acclimatation, Bois de Boulogne, Paris."

Rain Gauge (*A Needham*).—Rain gauges are only to be purchased of mathematical instrument makers, and they do not vend cheap articles. Any tinman can make a circular tin funnel a foot in diameter, and this may be placed in an upright glass measure 6 inches in diameter, with a scale marked in tenths of an inch on its side. The depth of rain shown on the scale divided by 4, gives the amount of rain. The glass measure may be bought of the chemical apparatus dealers.

Climbers for Walls of Dwelling (*C. M.*).—*North* aspect: Ivy, Cratægus pyracantha, Jasminum nudiflorum, and common Virginian Creeper (Ampelopsis hederacea). *East* aspect: Cotoneaster Simmonsii, Cydonia japonica, Photinia serrulata, double-flowering Clematis viticella, C. lanuginosa, C. flamula, C. azurea, Caprifolium sempervirens, C. periclymenum, Atragene sibirica, and Jasminum officinale grandiflorum; also Ayrshire Roses, Dundee Rambler, Ruga, Queen of the Belgians, and splendens. *West* aspect: Escallonia glandulosa, Viburnum suspensum, Buddlea globosa, Chimonanthus fragrans, Aristolochia sipho, Jasminum revolutum, Clematis Jackmanni, C. standishi, and Caprifolium luteum; also Roses—Hybrid China, Vivid; Bourbon, Sir Joseph Paxton, Acidalie, and Bouquet de Flore; Hybrid Perpetuals, William Jesse, La Reine, Madame Louise Carique, Madame Trudeaux, and Madame Domage; Tea, Gloire de Dijon, Noisette, Celine Forestier, Jaune Desprez, and Triomphe de Belwyller. *South* aspect: Wistaria sinensis, Billardiera scandens, Passiflora cærulea, Magnolia grandiflora, Exmouth variety, Garrya elliptica, Chimonanthus grandiflorus, Ceanothus rigidus, C. floribundus, and C. azureus, to which you may add Maréchal Niel and Climbing Devoniensis Roses; also Fortune's Yellow, Cloth of Gold, Lamarque, and Ophirie.

Collecting Debts (*W. L. E. Y.*).—The County court is open to you. Six years does not exclude you from the remedy.

Stopping Vines (*J. H. W.*).—1st, When the shoot is sufficiently long to show the bunch and the next joint above it, pinch out the point immediately above the leaf at the joint next above the fruit. 2nd, The floors of the house should be kept damp for some time after the Grapes begin to colour, but not when they are becoming ripe. 3rd, It would not injure the roots to lay a path with gas tar, further than by preventing rain passing through the walk, and if the latter is not wide tarring it will not make much difference.

Cyclamens Frosted (*C. M. Major*).—The best course to pursue is to leave them as they are, neither drying them off nor trying to induce fresh growth. It would not do to dry them off as the growths are not mature, nor excite them, as that would weaken the corms. Treat them as if they had not been frosted and they will gradually recover. We have Cyclamen vernum and C. coum in full bloom on rockwork, and none the worse of the late severe weather. We presume yours are C. persicum, which is not hardy.

Cutting Down Zonale Pelargoniums (*Calcaria*).—You should gradually withhold water, and cut the plants down early next month, repotting them in smaller pots when the new shoots are an inch or two long. Shift in May into the blooming pots. It will answer better than top-dressing.

Viola cornuta, Mimulus cupreus, and Pansies Sown in Heat (*A Subscriber*).—Plants will flower towards the end of July, and later, if raised from seed sown now in a hotbed. When large enough to handle they should be pricked off an inch apart in pans and grown on, hardening them off and planting them out in the end of May or early in June. They should be kept near the glass to have them strong.

Lilium tenuifolium, L. auratum, and Tritoma uvaria Seed Sowing (*Idem*).—The seed should be sown early next month in pots or pans, well drained, in a compost of turfy loam, peat, and leaf mould, with the addition of one-sixth of silver sand. The seeds should be covered with fine soil to a depth equal to the diameter of the seed. The pots should be gently watered and placed in a hotbed with a temperature of 70°. When the plants appear admit air and harden them off or remove them to a vinery at work, where they should be placed in a light, airy situation. If there is not a vinery at command, remove them, to a greenhouse. Keep them well supplied with water, and in September gradually withhold it, discontinuing the supply after October, all but a little now and then to keep the soil moist, but not wet. The Liliums should have the seeds placed so far apart that they can grow in the pots or pans as sown, an inch will suffice; but the Tritoma plants should, when large enough to handle, be potted off singly in small pots, and the soil in these should be kept moister in winter than for the Liliums. The Liliums, also, should be potted in November singly in 4½-inch pots, or three may be placed in a seven-inch pot. They should be kept in a cool greenhouse.

Tussilago farfara variegata for Bedding (*Idem*).—This is a rather effective and certainly pleasing and curious variegated hardy perennial. It answers for bedding, and will grow well in a position where it does not receive the mid-day sun. It will grow anywhere.

Ornamental-foliaged Annuals (*Idem*).—The most attractive of these are half hardy, or requiring to be grown in heat previous to planting out. Ricinus sanguineus, R. communis, R. borbonensis, and Zea japonica variegata, which all grow 5 or more feet high; Perilla nankinensis, Amaranthus melancholicus ruber, and Cineraria maritima, which grow 1½ to 2 feet; the variegated Marvel of Peru attains a similar height, and is handsome. Oxalis corniculata rubra (tropæoloides), is a very neat plant for an edging to such a bed as you propose.

Caladium Rootstocks Decaying (*T. Oliver*).—We think you have kept them too dry and in too low a temperature, either of which conditions will cause them to become "mellow" both at the crown and at bottom. They should remain in the pots as grown after they die down, and stand on a moist floor, or in a position where the soil in the pots will not become dust dry; but the pots should not be watered, though a skiff from the syringe once or twice a-week over the pots will keep the roots fresh. The temperature should not be less than 60° to winter them safely. The "mellow" rootstocks will most probably rot if they are not already rotten, especially those gone at the eyes; those decayed at the base may yet have the upper part or eye portion sound, and if so they may grow. Pot them, and place them in a bottom heat of 70° and top heat of from 65° to 75° or 80°.

Vines Unfruitful (*J. W.*).—The roots of the large Elm trees will, of course, injure your Vine border. The best plan is either to keep a deep open trench outside the wall, or build a deep wall in cement, to keep the Elm roots out. As the Vines have broken so strongly, however, we do not think the Elm roots are so much to blame, but rather incline to think that the comparative barrenness is either owing to the roots being too deep, or the wood being imperfectly ripened last season. Probably a little more hardening of the wood by extra firing in the dull autumn would have made all right.

Heating Small Plant-house (*Frozen-out*).—We should prefer a gas stove with a tube for the fumes from it to pass into the open air. You can increase or diminish the heat of that by merely turning the tap. We are sorry that No. 269 is out of print, but you can see our office copy any day that you call. We have no pity for those who have their gas apparatus frozen; they should have the meter in a place not liable to a freezing temperature.

Pine-apple Culture (*B. C. K.*).—"The Pine-Apple Manual" can be had free by post from our office if you enclose thirty-two postage stamps, with your address.

Best First Early Potato (*J. L.*).—We are informed by many reliable authorities that the Coldstream Early is the best of the earlies, both in quality and prolificacy.

Drying Specimens (*Hortus siccus*).—Laid flat and covered with sand, dry in a gentle heat, and then preserve between sheets of cartridge paper.

Erratum.—In our last we inadvertently stated that the new edition of the "Miniature Fruit Garden" was the 15th instead of the 14th.

Names of Plants (*W. J. P.*).—1, Polystichum, probably P. aculeatum; 2, Asplenium flaccidum; 4, Gymnogramma chrysophylla. (*T. T.*).—1, Pellæa adiantifolia; 2, Adiantum hispidum; 3, One of the garden hybrids between Gymnogramma chrysophylla and G. calomelanos; 4, Nephrodium setigerum; 5, Gymnogramma ochracea; 6, Cheilanthes hirta; 7, Gymnogramma chrysophylla; 5, Blechnum occidentale; 9, Gymnogramma ochracea; 10, Gymnogramma peruviana. (*C. A.*).—1, a Begonia, but species not detectable from such a scrap. 2, Abutilon striatum. 3, not determinable from a mere leaf.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending February 12th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 6	29.056	28.808	51	31	45	43	W.	.04	Boisterous and wet; clear; boisterous; fine.
Thurs. 7	29.406	29.026	54	36	44	43	W.	.22	Clear, with scattered white clouds; rain at night.
Fri. .. 8	29.981	29.328	53	40	45	43	W.	.02	Boisterous and showery; fine; lightning at night.
Sat. .. 9	29.971	29.768	55	42	46	44	S.W.	.06	Fine, very fine; densely overcast.
Sun. .. 10	30.161	29.943	55	35	46	43	S.	.21	Cloudy; overcast; boisterous with rain at night.
Mon... 11	30.166	29.911	53	40	46	44	W.	.02	Quite clear; fine with clouds; slight rain.
Tues. . 12	30.168	30.152	55	42	46	45	W.	.00	Overcast; uniformly overcast; cloudy.
Mean	29.844	29.648	53.71	38.00	45.43	43.57	..	0.57	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

CHIEF CHARACTERISTICS OF THE PRINCIPAL SORTS OF GAME FOWLS.

(*Concluded from page* 95.)

The following sorts are not considered as sportsmen's birds, not being much used by them:—

Dark Birchens.—These are produced by crossing, and though like the Dark Greys, are softer, and not so good. They are, in general, produced from the Brown Red hens, crossed with either Dark Grey, Yellow Duckwing, or Yellow Birchen cocks. The first cross makes good birds; the Duckwing cross, which is most common, is not so good; and the Yellow Birchen cross is the worst. Dark Birchens often have olive green legs of a dark colour, and incline to the yellow skin.

Willow-legged Duckwings stand next, and are a well-known sort at exhibitions. These are the gamest of all the willow-legged, and are good, hard, strong, and courageous. They are considered by some a sportsman's bird, as they have sometimes, though not generally, beaten both Brown Reds and Cheshire Piles, but, being willow-legged and yellow-skinned, cannot be classed as a true cock-fighters' bird, as they always reject willow-legged and yellow-skinned birds, as not being Game enough to be good winners.

Willow-legged Black-breasted Reds are the most common and best-known of all Game fowls, and, though larger, strongly resemble the wild species known as the Gallus Bankiva of Java and India, which is of exactly the same colour. The Willow-legged Black-breasted Reds are an original, wild, coloured sort, and are the parent stock of the Willow-legged Duckwings, which were originally bred from the strongest and hardest of these Black-breasted Reds, which first threw the Grey hens, and subsequently the Duckwing cocks. These Black-breasted Reds have long been rejected by sportsmen as being too soft, and they have been often beaten by Brown Reds, Piles, Dark Greys, Duckwings, and all the sorts that have been previously enumerated and described.

Willow-legged Black-breasted Reds are the Game fowl of the agricultural districts, contrary to the Brown Reds, which are the Game fowl of the towns, and of the manufacturing districts. These Black-breasted Reds, in breeding, always throw a great many pullets in proportion to the cock chickens, a sign of softness; whereas the Dark Greys, Brown Reds, and other

sportsmen's sorts, always throw more cock chickens than pullets in proportion, a sign of their superior hardness and goodness.

Derby Reds.—These are white-legged Black-breasted Reds, with yellow or daw eyes, and dark yellowish brown hens, not Partridge-coloured, but fawn-breasted. They were the favourite Game fowls of the late Earl of Derby, and are called after him the Derby Reds. They are ranked by some as a sportsman's bird, being the quickest, most active, and lightest-fleshed of all the Black-breasted Reds; but like all yellow or daw-eyed birds they want stamina and endurance, do not stand the dubbing or trimming well, and are not so game as the true sportsmen's breeds are.

Another good strain with the yellow or daw eyes is a breed of white-legged Duckwings found in East Suffolk, and bred there by the late Lord Huntingfield, and called Lord Huntingfield's Silver-Grey Duckwings. These are as good as the best breeds of Duckwings to be found, and are very fine birds.

In the neighbourhood of Ipswich, Suffolk, I met with a breed of Red-breasted Ginger Reds, with bright red eyes, and yellow legs, with light Ginger Partridge hens, mostly spurred. These are the fiercest and sharpest Game fowls I ever saw, being more fiery than the best Cheshire Piles. They beat the East Suffolk Brown Reds easily, and are yet unbeaten in the eastern part of the county. This is an original colour, and is found in India. These Gingers, however, are not so hard as the Dark Greys and Brown Reds.

The Blue-legged Duckwings are game little birds, rather small, and distinguished for their fine sharp heads, having the sharpest heads of all the Game fowls.

Blue-legged Red Duns are also Game birds.

The Yellow-legged Duckwings are rather spiritless, like almost all yellow or daw-eyed Game fowls, but are handsome, and prolific. All the yellow, bay, and light brown-eyed birds are bad.

There are two slight errors in my communication at page 95. The word "Furnace" in the first column, twenty-eighth line from the bottom, should be "Furness;" and in the second line of the second column, for "southern" read "northern." —Newmarket.

COWS DROPPING AFTER CALVING.

My experience may be useful to some of your readers. I have kept a dairy of nine or ten cows, for private use, for about twelve years, and during the first ten years I was unlucky enough to lose, on an average, a cow a-year from the above casualty. Several veterinary surgeons were called in, but none of their nostrums ever succeeded in setting one of my cows on her legs again; so I determined to try my own plan, which is this. It is well known that the complaint arises from weakness, and inflammation of the uterus consequent on calving: so immediately the cow drops I have strong mustard rubbed along the spine; if costive, a dose of castor oil is admiuistered, and gruel and old ale given every two hours. I have saved three cows by this treatment; the last, a very valuable animal, dropped on Sunday morning, and appeared in a hopeless state until last evening, when she rose, and is now to all appearance doing well.

I may add that I only keep Alderneys, and think there is nothing like them for family supply. During winter they are kept in the house, only going out for an hour or so on fine days, and their food is hay, grains, and mangold wurtzel. They give an abundant supply of milk, and rarely suffer from cold.—C. A. Hanbury, *Belmont House, East Barnet.*

COCHIN-CHINA COCK'S TAIL AND VULTURE HOCKS.

Knowing your friendship towards us of the feathered fraternity, I take up one of my quills to address you on a matter of moment to myself and my brother Cochins. Though I am a chicken, I am a full-grown one, and am considered a fine bird. I was highly commended at Birmingham, and took a prize at Bristol. I have a fine handsome tail, not over-large, but standing proudly erect for 2 or 3 inches, and then falling gracefully backwards. What I want to know is if this ornament, of which I am so proud, is really no ornament at all, but an eyesore in the sight of good judges. I ask the question because I see my brothers at the show with most of their tails gone, and I am told it must be so with me if I am to take high honours. Is this so? and must I lose my beautiful top feathers? Then, again, I have a nice cluster of feathers at the top of my legs. Is this what is called vulture hock, and am I to be considered a "duffer" because of these? In every other respect, I am told, I am perfect. Your opinion on these matters will oblige —A White Cochin Cock.

[We do not hesitate to say that with experienced judges you will be admired, because you are shown, as they term it, honestly. Wherever it is patent that liberties have been taken, and feathers pulled out of a tail, disqualification should follow. We must, however, add that in all your breed, the tail should not be a prominent feature, and 3 inches high is quite high enough. There are many beauties which become deformities when they are exaggerated. Instead of carrying it proudly erect, we advise you to drop it a little. The handsomest members of your family endeavour to present the line of beauty by slanting down from the head to the middle of the back, then rising very gradually and very little from the middle. The tail merely describes a curve, and falls in waving feathers. Vulture hocks are generally considered as a deformity of your breed.]

MUTILATION OF FOWLS AT EXHIBITIONS.

In your Number published on January 31st, there is a letter, signed Thos. Wrigley, jun., Tonge, Middleton, Manchester, which I think reflects most unjustly upon the Committee of the Leeds Smithfield Club. I have the honour to be a member of that Committee, and I can assure Mr. Wrigley, jun., that every care was taken at the last Show to appoint proper persons to receive the fowls, to place them in the pens, to have them well and judiciously fed and attended to during the days of exhibition, and, at the close, to put them into the proper hampers and have them sent home. At the request of my fellow Committee-men, and with an earnest desire to do what I could for the Society, I undertook the responsible and arduous duty of penning the birds with the help of a good assistant, also of repacking them for despatch to their homes at the close. I say it without any egotism, that every bird was as carefully and properly handled as if the owner had done it himself. To guard against any mishap I waited into the small hours of the morning to receive any hampers that might arrive by rail, and did not leave till a messenger from the station informed me no more could come, as the trains were all in.

I then satisfied myself that all was ready for the judges, and left the place in charge of night watchmen specially appointed. I was there again soon after six the same morning, and found all right. I kept a constant and careful watch over the pens during the days of exhibition, in addition to the men appointed, and when the hour for closing arrived I had the place cleared of every one but the Committee and servants. The same assistant and myself immediately commenced to take out the birds and pack them in the proper hampers. That there should be no delay we kept at our work until after three o'clock next morning. We were very careful to note what pens each packed, and on referring to my memoranda I find that Mr. Wrigley's two pens of Golden-pencilled Hamburghs (all that he exhibited), were packed by myself. I also packed the whole of the Silver-spangled, so that I am in a position to state most positively that neither his birds nor the Silver-spangled chicken brought under his notice lost any feathers in our hands. I found a sickle feather in one of the Silver-spangled pens, and drew attention to it before I touched the bird; there was no doubt it had cast it. I also had my attention called to a sickle feather in one of the Black Hamburghs (sent from Mr. Wrigley's neighbourhood), which had been ingeniously fastened in with black silk to make up a deficiency. So much for sickle feathers. Excepting in the case of one Duck, which had been lost in transit, the Committee have not had a single complaint of birds missing or wrong birds received. I think this speaks for attention with a lot of about seven hundred pens.

I feel that the remarks of Mr. Wrigley respecting the Silver-spangled chicken are a gross libel upon our Committee, for there is not a single gentleman belonging to it who would demean himself to commit such a cruel and dastardly act as wilfully plucking "every laced feather from both wings," or any other feathers, and I think my explanation ought to prove that the Committee took every care no one else should do so. They do not know one person's birds from another; every exhibitor is alike to them. It is their aim and study to conduct their shows upon honest principles and with strict impartiality. After devoting so much valuable time from their business, and working so hard

for no personal benefit to themselves, I think it is base ingratitude to throw out such insinuations as those appearing in your correspondent's letter.—James Brabeck.

BRAHMA POOTRAS AT BRISTOL.

You have, with all the authority of editorial power, in your foot-note to Mr. Wright's letter ordered the combatants to be separated; but I crave a few lines of space—not to renew the battle in the slightest, but to express my own regrets that anything approaching personality, even in appearance, should have fallen from my pen, and further to express the wish that "differences of opinion may never sever friendship."

Further, I cannot rest contented with an amount of praise for my strain of Brahmas, which possibly I do not at all deserve. Let me explain. Mr. Wright would make it appear that I alluded to Mr. Boyle when speaking of a yard I had seen, the great success of which depended on some crossing with my own. I should be sorry, indeed, for this statement to go forth uncontradicted on my part. I have never had the pleasure of seeing Mr. Boyle or his birds. He had birds of mine some two or three years ago, in this manner: I hatched some chickens in January, 1863 (I think). They were shown at Basingstoke in May, where they were placed before several old pens; and after this, as I did not like the cockerel, who rather bullied his younger brothers, I sold the pen at a low price to the late Mr. F. Pease, of Darlington. He found that one pullet had not yellow legs. He sold the birds to Mr. Beldon, who exhibited them at the Newcastle Show, held in connection with the Royal Agricultural Society. There they were awarded first prize as chickens, and claimed by Mr. Boyle. One of the pullets was shown by Mr. Boyle in his second-prize pen at the Agricultural Hall. According to the opinions of many breeders, though second, the pen ought to have been first, and was placed first at Birmingham. This, at least, was the history given me by my lamented friend, Mr. F. Pease, in one of the last letters I ever received from him. How far Mr. Boyle used these birds in his yards I am quite unable to say, so that I wish clearly to say that I had not Mr. Boyle in my mind, but another friend, whose name, both as a Dark and Light Brahma-breeder, is very well known and constantly seen in our prize lists.—Y. B. A. Z.

SOUTH OF IRELAND POULTRY, PIGEON, AND CAGE BIRD ASSOCIATION.

(*From a Correspondent.*)

The sixth annual Exhibition of this Society, held in the Athenæum, Cork, on the 30th and 31st of January, was attended with considerable success.

The show of poultry, though not equal either in the number or quality of the birds exhibited to that division of the Munster Show, held in Limerick for the first time last December, was on the whole very creditable and encouraging to our Irish friends, composed as it was entirely of birds the property of Irish fanciers. The *Spanish* birds, not only so generally admired, but also so suited to the Irish climate, should be more attended to, as, with the exception of the prize pens and one or two others, the collection was not above mediocrity. *Dorkings* mustered very strongly, and were a superb class, in which Mr. O'Grady, of Bandon, showed largely and well. Miss Louisa Pike also exhibited a bird really unexceptionable. A little more depth of body is desirable in their Dorkings. Saving Mr. Zurhorst's deservedly-famous *Cochins*, which won Mrs. Lyons's medal, and a pen belonging to Mr. Williams, these birds deserve no notice. The same may be said of Dark *Brahmas*, Mr. Boyle's winners excepted, and the Light Brahmas should on their return home be consigned to the cook. Of *Crève Cœurs* some were very good. *Game* had improved since 1866, but were still deficient. Of White-crested and Gold-spangled *Polands*, one or two very excellent pens of each kind were shown, and of Silver-spangled Mr. Williams showed the remains of a famous strain, which I trust he will try and restore to its former excellence. *Hamburghs* increased in number and improved in kind. *Bantams* were poor. *Houdans* were numerous and improved, and the White-crested *Sultans* graced several compartments. *Malays* took the first prize in the Any variety class, the winner being represented by one of the best birds in the kingdom, from Mr. Cooper's large collection, and which has taken seven or eight first prizes at various English and Irish shows. *Turkeys* were few in number, but very superior, and the same may be said of *Geese*. In both these classes Mr. Cooper won all the first prizes. Aylesbury and Rouen *Ducks* were preseut in large numbers, and many, especially of the latter kind, had much merit. Mr. Cooper won the cup for most points in poultry.

In the *Pigeon* department a very large collection was shown, and one which, for the excellence of the birds exhibited, could scarcely be surpassed. The Ponters were of unusual merit, and most prominent in this class was Mr. A. W. Shaw's pair of Blues, taking first honours in a very superior collection. The Reds and Whites were also well worthy of attention, Dr. Harvey being first in the latter class. Carriers were numerous and excellent, especially the Blacks and Duns, and in the former I think that the second-prize birds should have been first. However, both belonged to Dr. Harvey, and I daresay he did not object to the decision. Blues were fair. The Short-faced Tumblers, more particularly the Almonds and winning Mottles, would have held their own at any show. The common Tumblers were a little behind, although this variety seems of late to have been much cultivated in Ireland. Barbs were extremely fine; some birds of good merit in the Any colour class, however, being a little out of condition, had consequently to be passed over. Jacobins and Fantails were good; but the former variety I prefer with pearl eyes. In Owls was a remarkably small pair of Whites, of African origin, which defy competition; other colours poor. Trumpeters were very fine, Mr. Perrott winning the medal for the best, but not without being closely pushed by Mr. Shaw. Turbits, Nuns, and Magpies were fair. The Any variety class brought out some new and rare birds, the German Toys, Isabels, and Frillbacks being my special fancy. In Pigeons Mr. A. W. Shaw won the medal for the greatest number of points.

I cannot close without mentioning the rare and valuable collection of Hawks, Cormorants trained to fish, Parrots, Cockatoos, &c., exhibited by Mr. Corbett, of Castle Connell. A larger or more valuable collection of fancy birds is not possessed by any one in Ireland. They were the centre of attraction, and added much to the success of the cage bird department, in which, however, many valuable song birds were exhibited.

This Show, under the management of the active and indefatigable Secretary and Treasurer, Frank Holder and J. C. Perry, Esqrs., and an able Committee of gentlemen to assist them, will, it is to be hoped, continue to improve, and with the Munster Show (which by the way our Limerick friends expect to make a great success next year, having already received promises of eight medals for the Pigeon department only), will prove of much benefit to the south and west of Ireland.—J. W.

[We published the prize list last week.]

NANTWICH POULTRY EXHIBITION.

The eighth annual Show was held on the 8th and 9th inst.; and according to the official list the following awards were made, but our own report is unavoidably postponed till next week.

Spanish.—Prize, J. Dean, Wharton. Highly Commended, R. Hulse, Winsford. *Chickens.*—Prize, J. Dean. Highly Commended, J. Siddorn, Over Lane.

Dorkings.—Prizo and Commended, T. Burgess. *Chickens.*—First and Second, T. Burgess. Commended, Mrs. Williams, Baddington.

Cochin-China (Buff).—First, Messrs. Church & Houlding. Second, W. James, Stapeley. *Chickens.*—First and Hon. Mrs. Sugden's Cup, W. James. Second, W. A. Taylor, Manchester. Third, G. Fell, Warrington. Highly Commended, H. Mapplebeck, Birmingham; Col. Stuart Wortley; J. Cattel, Birmingham; Rev. S. C. Hamerton, Warwick. Commended, H. Tomlinson, Birmingham; W. James. *Pullets.*—First, H. Mapplebeck. Second, T. Bott, Bury. Highly Commended, W. James; W. A. Taylor.

Cochin-China (White).—First, J. Dodd, Minshull Vernon. Second, G. Williamson, Nantwich. Highly Commended, J. Dodd.

Brahma Pootras.—First, J. Heath, Nantwich. Second, W. Johnson, Nantwich. Commended, W. B. Etches; Messrs. Church & Houlding.

Game.—Cup, T. Burgess. Second and Third, J. Fletcher, Stoneclough. Highly Commended, J. H. Williams, Welchpool; T. Whittingham, Batherton. Commended, W. Galley, Nantwich.

Game (Black Reds).—First and Second, T. Burgess. Third, J. Grocott, Haughton. *Chickens.*—Cup and Second, J. Heath, Nantwich. Third, J. Grocott. Highly Commended, J. Hulse, Cuckoo Lane; R. Ashley.

Game (Brown Reds).—First, T. Burgess. Second, J. Withinshaw, jun., Nantwich. *Chickens.*—First, G. F. Ward, Wrenbury. Second, G. Davenport, Nantwich. Third, T. Williamson, Nantwich. Highly Commended, P. Judson, Nantwich; T. Burgess; T. Hope, Newtown; H. Timmis, Walgherton. Commended, W. Fisher, Ravensmoor; T. Simpson, Nantwich; W. Clarke, Burland; G. Basford, Nantwich.

Game (Any other variety).—First, R. Ashley, Nantwich. Second J. Judge, Drayton. Third, Miss Sadler, Whitchurch. Highly Commended, Messrs. Church & Houlding.

Game (Any other than Black or Brown Reds).—*Chickens.*—First and Second, R. Ashley. Commended, R. Crewe, Burland.

Game.—*Cock.*—First, R. Ashley. Second, T. Burgess. Third, P. Judson. Highly Commended, J. B. Furber, Baddiley; W. Farmer, Nantwich. Commended, W. Sowerbutts, Nantwich; G. Williams, Acton; T. Burgess. *Cockerel.*—First, T. Whittingham. Second, J. Heath. Third, S. Edwards, Nantwich. Highly Commended, R. Ashley. *Hens.*—First, R. Ashley. Second, J. Walley, Larden Green. Third, G. Davenport. Highly Commended, J. Prince, Nantwich; G. F. Ward, Wrenbury. Commended, Messrs. Church & Houlding; T. Burgess; G. F. Ward.

Game Bantams.—First, R. Ashley. Second and Third, Messrs. Church and Houlding. Commended, G. F. Ward.

Bantams (Any other than Game).—Prize, G. Williamson.

Hamburghs (Pencilled).—First, G. Davenport. Second, W. Speakman, Doddington. Highly Commended, G. Williamson.

Hamburghs (Spangled).—First, G. Davenport. Second and Third, T. Burgess. Highly Commended, J. Hitchenson, Moulton. Commended, W. Lawton, Lawton Hall.

Polands (Any colour).—First and Second, J. Heath.

Ducks (Aylesbury).—Prize, Mrs. M. Hornby, Darnhall. Highly Commended, H. Haslam, Drayton.

Ducks (Rouen).—First, Messrs. Church & Houlding, Nantwich. Second and Highly Commended, T. Burgess, Burleydam.

Ducks (Various).—Prize, W. B. Etches, Woodhouse.
Turkeys.—Pres. Cup, C. Barnett, Blakenhall. Highly Commended, C. Barnett; T Burgess, Burleydam.
Geese.—Prize, T. Whittingham, Batherton. Highly Commended, W. Furnival, Sound.
Cottagers' Prize for the Best Pen of Cross-bred Fowl.—First, T. Moulton, Nantwich. Second, J. Bullock, Nantwich. Third, Mrs. Dodd, Minshull Vernon.
Selling Class.—First, G. F. Ward. Second and Third, T. Burgess. Highly Commended, J. Dutton, Bunbury. Commended, J. Heath.

SWEEPSTAKES FOR SINGLE COCKS.

Cochin-China.—Prize, W. James. Commended, H. Haslam.
Brahma Pootra.—Prize, Mrs. Galley, Nantwich.
Game.—Prize, T. Burgess.
Game Bantam.—First and Second, W. Griffiths. Third, T. Burgess.
Hamburgh.—Prize, J. Walley, Baddiley.

PIGEONS.

Carriers.—First, W. Cliff, Nantwich. Second, E. J. Butterworth. Highly Commended, W. Cliff; J. Chesters.
Dragons.—First, H. Prince, Nantwich. Second and Highly Commended, W. Cliff.
Pouters.—Prize, E. J. Butterworth, Nantwich.
Barbs.—First, J Chesters, Nantwich. Second, L. Glassey, Dod's Green. Highly Commended, H. Nixson, Dysart Buildings; W. Cliff.
Nuns.—Prize, J. Dutton.
Tumblers (Any variety).—First and Second, T. Cawley, Tarporley. Highly Commended, T. Cawley; A. Boote, Weston.
Fantails.—First, J. Dutton, Bunbury. Second, S. Worsey, Nantwich. Highly Commended, R. Green, Nantwich; E. J. Butterworth.
Jacobins.—Prize, L. Glassey.
Trumpeters.—Prize, J. Dutton. Highly Commended, H. Prince, Nantwich.
Owls.—First, J. Chesters, Nantwich. Second, E. S. Nixson, Dysart Buildings. Highly Commended, W. Brereton, Ravensmoor.
Turbits.—First, H. Prince, Nantwich. Second, J. Chesters.
Pigeons (Any other variety).—First, J. Dutton. Second, H. Prince. Highly Commended, J. Dutton; J. Chesters.
Doves.—Prize, J. Dutton. Highly Commended, W. B. Etches.
Selling Class.—First, Second, and Commended, J. Hokenhull, Nantwich.

A silver cup, given by G. W. Cooper, Esq., was given to T. Cawley as having the most perfect pen; and a prize of 10s. was awarded to J. Dutton, as having the most points in prizes.

SINGING BIRDS.

Canaries (Yellow).—First, H. Sumner, Nantwich. Second, Messrs. Skidmore & Williamson.
Canaries (Buff).—First and Extra, H. Sumner. Second, Messrs. Skidmore and Williamson.
Canaries (Any other variety).—First, R. Green, Nantwich. Second, J. Davies, Nantwich. Highly Commended, H. Sumner.
Linnets (Brown).—First, Messrs. Skidmore & Williamson. Second, W. Williamson.
Goldfinches (Red Linnets).—First, Messrs. Skidmore & Williamson. Second, D. Robinson, Nantwich.
Skylarks.—First, T. Simmons, Nantwich. Second, D. Robinson.
Bullfinch.—First, T. Robinson, Nantwich. Second, Messrs. Skidmore and Williamson.
Cage of Six Canaries.—First, H. Sumner, Nantwich. Second, Messrs. Skidmore & Williamson.
Rabbits (Long Ears).—First, W. Crawford, Nantwich. Second, W. Askew, Nantwich. Highly Commended, E. J. Pace, Nantwich. *Weight.* First, J. Robinson. Second, J. Simpson, Nantwich.

The Judges were—For Poultry, Edward Hewitt, Esq., of Sparkbrook, Birmingham, and William Teehay, Esq., of Fulwood, near Preston; and Charles Bowles, Esq., of Chester, officiated for Pigeons.

CRYSTAL PALACE BIRD SHOW.

February 9th to 15th.

Once again with feelings akin to pleasnre, we have to say our say about the annual Exhibition of British and Foreign Birds now being held at the Crystal Palace, and of which we were fearful the late disastrous fire might necessitate the postponement; but the large resources of the building, we are glad to find, have been equal to the emergency, and a most excellent show-room has been made by the conversion of one of the refreshment departments. The unfortunate destruction of the tropical end of the Palace is very much to be regretted, as the beautiful foliage of the plants is wanting "to lend enchantment to the scene."

We expended so much eulogium on the last gathering together of the feathered tribes at this place, that we are at a loss for words to convey our admiration of the Exhibition which we have just seen. It is truly a magnificent one, and such a one as has never before been witnessed, the specimens exhibited clearly showing that the attention requisite to keep a caged bird in health is quite understood. Nor are the little prisoners abashed at so much notice taken of them by strangers; some saucily carrol forth their sweet notes of welcome, others with notes failing sweetness, croke a kind reception to the visitors.

The collection of British and Foreign Birds is of rare excellence and beauty. Our native songsters are admirably represented. The Blackbird and the Thrush, the Linnet and the Goldfinch, the Nightingale and the pugnacious Robin, all may be seen in friendly communion.

The specimens of our little Bullfinch are very choice. It would be impossible to select any one specimen for special praise, so equal are they to each other in beauty and condition, as the distribution of the prizes and commendations bears testimony.

We will, however, point out one or two birds in the class of varieties noticeable as showing the strange freaks which dame Nature sometimes plays with her children. One specimen, a white Sparrow, is an oddity in which very few persons believe. However, we imagine it cannot be a London Sparrow; another, very rarely seen, considering the natural colour of the bird, is an albino Jackdaw. There are also a white Hedge Warbler, a white Bullfinch, and a pied Blackbird, Lark, and Linnet, and a most rare specimen of the Shore Lark.

The *Parrot* class is very fine, some of the Indian Lories being exquisite in colour. Our old friend, the White Cockatoo, which invariably carried off the prize for that class at previous shows, is absent. We hope that nothing has happened that has tended to shorten its days, as it was, indeed, a splendid representative of its tribe—a great favourite.

The show of *Canaries* is unparalleled in the number, beauty, and good condition of the birds. There are some very superb specimens, especially in the Norwich Jonque, the London Fancy, and Gold and Silver-spangled Lizards. The Jonque and Mealy Goldfinch Mules are stronger in competition than on any former occasion, and embrace many choice and elegant specimens.

Too much praise cannot be bestowed on the Superintendent, Mr. Wilkinson, for the very admirable manner, under the existing circumstances, in which the Show is managed. A considerable amount of judgment and thought is required to arrange so large a collection of birds so that they may be seen to advantage by the visitors, and also to enable the Judges to perform their duties satisfactorily, which we imagine must have been very onerous.

CANARIES.

Clear Yellow (Norwich).—First, H. Ashton, Manchester. Second, H. Vine, East Cowes, I.W. Third, W. Walter, Winchester. Equal Third, G. Y. Collinson, Thorpe Hamlet, Norwich. Very Highly Commended, J. Bexson, Derby; W. Walter; R. Mackley, Norwich; J. Judd, Newington Butts. Highly Commended, W. White, Nottingham; G. Y. Collinson; H. Vine; J. Pullen, Shoreditch. Commended, G. Y. Collinson; G. Moore, Northampton; W. Barnes, Cannon Street.
Clear Buff (Norwich).—First and Second, H. Ashton. Third, G. Y. Collinson. Very Highly Commended, G. Y. Collinson; J. Bexson; J. Pullen; W. Walter. Highly Commended, G. Y. Collinson; G. Cummings, Gloucester; W. Barnes. Commended, G. Y. Collinson; J. Pullen.
Variegated or Marked Yellow (Norwich).—First, Second, and Third, G. Y. Collinson. Very Highly Commended, J. Meredith, Kingston-on-Thames; G. Y. Collinson; W. Walter. Highly Commended, R. Mackley; H. Vine. Commended, G. Y. Collinson; R. Mackley.
Variegated or Marked Buff (Norwich).—First, H. Ashton. Second, G. Y. Collinson. Third, E. Orme, Derby. Very Highly Commended, W. Walter; J. Judd. Highly Commended, G. Y. Collinson; J. Pullen. Commended, G. Y. Collinson.
Marked Crested Yellow (Norwich).—First and Second, G. Y. Collinson. Very Highly Commended, G. Y. Collinson; J. Knibb, Northampton. Highly Commended, Mrs. M. La Touche, Berkeley Square; S. Tomes, Northampton. Commended, W. Walter.
Marked Crested Buff (Norwich).—First and Second, G. Y. Collinson. Very Highly Commended, G. Y. Collinson; R. Mackley. Highly Commended, G. Y. Collinson; J. Judd. Commended, W. Walter; J. Judd.
Clear Yellow (Belgian).—First, J. Poole, Sutton-in-Ashfield, Notts. Second, J. Hayes, Sutton-in-Ashfield, Notts. Third, J. Doel, Stonehouse, Devon. Very Highly Commended, J. Doel; Miss H. Maunder, Pinner; J. Hayes. Highly Commended, R. J. Troake, Bristol; H. Vine. Commended, W. Inson, Redland, Bristol; A. W. Booker, Allerton, Liverpool.
Clear Buff (Belgian).—First, J. Doel. Second, O. Nicholson, Landport, Portsea. Very Highly Commended, R. J. Troake; J. Hayes. Highly Commended, A. W. Booker; Miss H. Maunder; J. Hayes; O. Nicholson. Commended, A. W. Booker; J. Poole.
Variegated or Marked Yellow (Belgian).—First, J. Poole. Second, W. Inson. Highly Commended, O. Nicholson. Commended, Mrs M. La Touche.
Variegated or Marked Buff (Belgian).—First, J. Bexson. Second, W. Inson. Very Highly Commended, J. Poole. Commended, O. Nicholson.
Crested or any other Variety (Belgian).—First and Second, H. Ashton. Very Highly Commended, W. Walter.
Jonque London Fancy.—First and Second, J. Waller, Tabernacle Walk, Finsbury. Very Highly Commended, W. Brodrick, Budleigh, Salterton, Devon. Highly Commended, T. Mann, Langton Road, Camberwell New Road. Commended, W. Brodrick; J. Waller.
Mealy London Fancy.—First and Second, J. Waller. Very Highly Commended, W. Brodrick. Highly Commended, T. Mann. Commended, L. Corti.
German or any other Variety Except Norwich or Belgian.—First, G. Moore, Northampton (Buff Cinnamon-crested). Second, J. Wynn, Northampton (Buff Variegated Cinnamon). Very Highly Commended, S. Tomes (Crested Buff Yorkshire). Highly Commended and Commended, F. Schweiss, Hooper-square (German).
Golden-Spangled Lizard.—First, H. Ashton. Second, W. Vie, Derby. Third, W. White. Equal Third, F. W. Fairbrass, Canterbury. Very Highly Commended, G. Y. Collinson; T. Fairbrass; L. Corti; T. Robinson, Middlesborough-on-Tees. Highly Commended, G. Harrison, Canterbury. Commended, J. Hayes.
Silver-Spangled Lizard.—First, H. Ashton. Second, F. W Fairbrase. Third, G. Harrison. Equal Third, T. Robinson. Very Highly Commended, G. Y. Collinson; G. Harrison; B. Poynton, Old Basford, Notts. Highly Commended, J. Houghton; P. Flexney, Caledonian Road. Commended, T. Fairbrass; L. Corti.
Jonque Cinnamon.—First and Third, G. Goulter, Norbiton, Surrey. Second, J. Wynn. Very Highly Commended, R. Mackley; H. Vine. Highly Commended, S. Tomes; G. Moore; H. Marshall, Durham. Commended, J. Reeks, Walworth Road; J. Waller; G. Y. Collinson.
Buff Cinnamon.—First, H. Vine. Second, G. Goulter. Very Highly Commended, J. Wynn. Highly Commended, J. Reeks; G. Y. Collinson; H. Marshall. Commended, G. Tuckwood, Nottingham; G. Moore.
Jonque Goldfinch Mule.—First and Third, J. Doel. Second, H

Ashton. Very Highly Commended, J. Doel; H. Marshall; E. Coke, Derby; F. E. Coleman, Clapham Common; H. Ashton. Highly Commended, G Moore; H. Marshall. Commended, G. Moore; J. Judd.

Mealy Goldfinch Mule.—First, H. Marshall. Second, H. Ashton. Very Highly Commended, B. Poynton. Highly Commended, H. Ashton; R. Mackley; E. Coke. Commended, W. Heap, Bradford, Yorks.

Linnet Mule.—First, H. Marshall. Second, H. Ashton. Very Highly Commended, F. E. Coleman. Highly Commended, W. Heap.

Any other Variety of Canary Mule.—First, H. Marshall (Siskin Mule). Second, J. Doel (Black Mule).

Best Six Norwich Canaries in one Cage.—First, W. Walter. Second and Third, J. Judd. Very Highly Commended, G. Y. Collinson; R. Mackley. (The whole class highly commended.)

Best Six Belgian Canaries in one Cage.—First, J. Hayes. Second, Miss H. Maunder. Third, J. Judd. Very Highly Commended, J. Rutter, Sunderland. Highly Commended, R. J. Troake; W. Walter.

Best Six Golden-Spangled Lizards in one Cage.—First, G. Tuckwood. Second, J. Hayes. Third, Rev. V. Ward, Canterbury. Highly Commended, F. W. Fairbrass.

Best Six Silver-Spangled Lizards in one Cage.—First, H. Ashton. Second, G. Tuckwood. Third, J. Hayes. Very Highly Commended, B. Poynton. Commended, F. W. Fairbrass.

Best Six Goldfinch Mules in one Cage.—First, H. Marshall. Second and Third, H. Ashton. Very Highly Commended, J. Doel. Highly Commended, W. Walter. Commended, G. Moore.

Miscellaneous.—First, W. Heap (Hybrid Bullfinch Mule). Second, W. L. Chapman, Northampton. Very Highly Commended, H. Ashton (Goldfinch and Bullfinch Mule); W. Walter (Mule). Highly Commended. H. Hanley, Regent's Park Barracks.

BRITISH BIRDS.

Bullfinch.—Equal First, W. Walter; J. Judd. Very Highly Commended, H. Ashton; W. Newman, Norwood; Mrs. F. King, Upper Norwood; J. Judd; F. Schweiss; Highly Commended, F. Hunt, Upper Norwood; H. Vine; J. Wynn.

Chaffinch.—Prize, H. Vine. Very Highly Commended, W. Walter. Highly Commended, S. Hinds.

Goldfinch.—First, S. Hinds. Second, W. Price. Very Highly Commended, S. Hinds; J. Doel; W. L. Chapman; H. Vine. Highly Commended, O. Lipscombe, Westbourne Grove, W.; G. Cummings; J. Judd; C. J. Meredith.

Linnet.—First, H. Ashton. Second, H. Marshall. Very Highly Commended, O. Nicholson; Mrs S. Searle, Norwood. Highly Commended, J. Meredith; W. Walter; Mrs. La Touche.

Skylark.—Prize, J. Judd. Very Highly Commended, J. S. Benton, Rochester; J. Judd. Highly Commended, C. F. Johnson, London; H. Hanley.

Woodlark.—Prize, J. Judd. Very Highly Commended, C. F. Johnson. Highly Commended, C. F. Johnson; W. Walter; J. Judd.

Robins.—Prize, Master J. Bayden.

Blackbird.—Equal Prize, H. Vine; A. Raven, Norwood. Very Highly Commended, W. Newman; A. Isaacs, Prince's Street Leicester Square. Highly Commended, G. Plummer.

Thrush.—Equal Prize, J. Trusson, Lower Norwood; R. J. Baldwin, Northampton. Very Highly Commended, W. Newman; W. Walter; A. Isaacs. Highly Commended, H. Vine.

Starling.—Prize, J. Judd. Very Highly Commended, Mrs. Nickless; J. Judd. Highly Commended, F. Nickless, Westminster Road, London; Miss R. Nickless; C. Nickless.

Magpie.—Prize, A. Von Glehn, Sydenham. Very Highly Commended, G. Treacher. Highly Commended, J. Collins

Any other Variety of British Birds.—First, H. Hanley. Second, Mrs. La Touche. Very Highly Commended, R. Pruden Highly Commended, Mrs. La Louche; J. Pullen; W. Walter; H. Marshall; W. Williams, Nottingham.

BIRDS OF PASSAGE AND MIGRATORY BIRDS.

Blackcap.—Prize and Highly Commended, C. F. Johnson.

Nightingale.—Prize, T. Alderton, Woolwich. Highly Commended C. F. Johnson.

Siskin.—Prize, R. J Troske. Very Highly Commended. Mrs. La Touche; J. Judd. Highly Commended, J. Meredith; H. Vine; W. Price.

Titlark or Tree Pipit.—Prize, J. Judd. Very Highly Commended, W. Walter; H. Hanley. Highly Commended, J. Judd.

Any other Variety.—Prize W. Walter.

FOREIGN BIRDS.

Lemon or Orange-crested.—Prize, F. Schweiss.

Cockatoo, Leadbeater, or Rose-breasted.—First, A. Isaacs. Second J. C. Winn. Very Highly Commended, W. B. Bailey, Romford. Highly Commended, A. Isaacs.

Cockatoo any other Variety.—Prize, A. Isaacs. Very Highly Commended, J. Judd.

Grey Parrots.—First, C. Thompson, Upper Norwood. Second, C. W. Wass, Upper Norwood. Very Highly Commended, Messrs. Mitchells, Mile End Road, London; W. Heap; W. Waller, jun., Tabernacle Walk, Finsbury; J. Judd; W. B. Bailey. Highly Commended, E. Upton, Norwood.

Green or any other Variety of large Parrots Except Grey.—First, W. W. Westbrook (Turon). Second, A. Booker (Amazon). Third, W. B. Bailey. Very Highly Commended, A. Booker, (Duffrensis, West. Indies); A. Isaacs (Bulla Bulla). Highly Commended, W. Walter (Bulla Bulla).

Love Birds.—First, W. Walter. Extra, J. Judd. Very Highly Commended, A. Isaacs; J. Judd.

Austra lian Grass Parakeets.—Prize, J. Judd. Very Highly Commended, W. Price; W. Walter. Highly Commended, Miss H. Maunder; A. Isaacs.

Ring-necked or Bengal Parakeets.—Prize, Hon. F. Dutton, Piccadilly. Very Highly Commended, J. C. Winn. Highly Commended, Hon. F. Dutton; Miss H. Maunder. Commended, W. H. Wright.

King Parrots.—Prize, F. Marshall. Highly Commended, J. Rose, Norwich.

Rosebill Parakeets.—Prize, J. Judd. Very Highly Commended, J. Judd. Highly Commended, W. B. Bailey. Commended, W. Walter.

Red-Rump Parakeets.—Prize, J. Judd.

Cockateals.—Prize, J. Judd. Very Highly Commended, J. Meredith. Highly Commended, A. Isaacs.

Any Variety of Lory.—Equal, J. G. Chillingworth; J. Judd. Highly Commended, J. Judd.

Diamond Sparrows (Single).—Prize, J. Judd. Very Highly Commended, A. Isaacs. Highly Commended, Miss H. Maunder; W. Walter.

Coral-necked Sparrows. — Prize, W. Walter. Very Highly Commended and Highly Commended, Miss H. Maunder.

Java Sparrows.— Prize, A. Isaacs. Very Highly Commended, H. Vine; W. Walter. Highly Commended, Miss H. Maunder.

Nonpareils.—Prize, Miss H. Maunder. Very Highly Commended, W. Walter.

Indigo Blue Birds.—Prize, J. Judd. Highly Commended, W. B. Bailey.

Bishop Birds.—Prize, J. Judd. Commended, H. Hanley.

Zebra Waxbills.—Prize, W. Walter. Commended. J. Judd.

Orange-Checked Waxbills.—Prize, Miss H. Maunder.

Any other Variety of Waxbills.—Prize, W. Walter.

Virginian Nightingales.—Prize, W. Price. Commended, Miss H. Maunder; S. Burge.

Cardinals.—Prize, Miss H. Maunder. Commended, W. Walter.

Whidah Birds.—Prize, W. Walter.

Any other Variety of Foreign Birds.—First, A. Isaacs. Second, M. Nathan. Third, Miss H. Maunder. Highly Commended, W. Walter; A. Isaacs; W. B. Bailey. Commended, W. Walter; A. W. Booker; A. Isaacs; M. Nathan.

Judges.—*Canaries*: Mr. G. J. Barnesby, Mr. T. Moore, and Mr. A. Wilmore. *British and Foreign Birds*: Mr. W. Goodwin.

VENTILATING INCUBATORS, AND INCUBATING TEMPERATURES.

As that which Mr. Schroder states in the number published January 31st is incorrect and likely to mislead, allow me space for a few remarks. He says that his incubator is the only one constructed to supply the eggs with constant ventilation. He has fallen into error. My incubator allows, and always has allowed, for a continual supply of fresh air to the eggs; and indeed I can hardly think that any one who knows anything of hatching could omit so important a part in the construction of an incubator as that which provides for supplying the eggs with vital air. I have an incubator by Cantelo, and the eggs in that are subjected to constant ventilation—I think too much, as, although it is certain they require some, it is as certain they require but little, eggs when hatching in the natural way being entirely covered by the hen's body, and receiving very little air except when she is away from her nest.

It is not my wish to detract from the merits of any incubator or to extol my own; but as "Investigator," a few weeks since, questioned the possibility of keeping an incubator with a wooden case of an equal temperature, I will say that mine is constructed of wood for the very reason of its quality of resisting external temperature. But I do not trust to wood alone: to make assurance doubly sure I protect it internally with hair felting, causing the temperature to keep regular with very ordinary attention, as the following facts will prove. Last night at ten o'clock I left the temperature at 102°, and found it this morning at eight o'clock exactly the same; and on the previous night I left it at 100°, and found it 99°, and it was very regular at from 102° to 105° during both days.

Three weeks ago. when the temperature out of doors was from 20° to 25° below freezing, I worked the incubator a few days for experiment. I left it a 11 P.M. at 102°, and found it at 8 A.M. at 100°; and although the temperature out of doors increased several degrees by noon, that of the incubator fell a couple of degrees, but this was on account of the pressure being taken off the mains. The next night I left the temperature at 100°, found it 98°, attended to the gas, and at noon it had reached 101°. The incubator is now working in a small outhouse where there is no warmth except that caused by it. With all deference to "Investigator," I must say that it will take much to shake my faith in wood *versus* metal, for the outer construction of an incubator.

With regard to the temperature an egg will bear, "E. S." stated on January 8th, that a temperature of 110° did not kill, although the eggs were subjected to it for a whole night. I say that in the first week, although dangerous, probably a higher temperature than 110° would not kill; but towards the end of the third week 110° continued all night would be certain death. Eggs require less heat during the last week of hatching. Some aver they require more heat, but it is a mistake: a hen is not so warm when wasted by sitting as when she commences to sit.

It is quite needless to turn the eggs twice a-day, and although I consider it advisable to do so once a-day, I can upset the theory of turning them at all during the whole time.

Without having the presumption to state, as Mr. Schröder virtually does in his prospectus, that every incubator except his is a bad one, I will presume to say that if mine, as now

constructed, will not answer well, if properly worked, I am quite sure no incubator can; it has the advantages of being very compact, and, being a handsome piece of furniture, it may be kept working in any out-of-the-way corner of a room, and, if taken care of, twenty years will not wear it out. When at Birmingham during the late Show I was complimented by all who examined it, and had the pleasure of taking many orders. —John Brindley.

NEW PUBLICATION.

The Instantaneous Reference for Poultry, Pigeons, and Rabbits. By David P. Gooding, Tower Hill, Ipswich.

We are disposed to think gratefully of those who undertake to lessen our labours. Thus we recollect seeing in a nursery a large sheet, very like that with which we have to do, which started well. It said, "In the event of accident or illness send for a medical man, but if none be at hand, use the following remedies;" and then there were instructions for burns, sprains, dislocations, fractures, and all the other ills that flesh is heir to. So again the industrious compiler of "Europe at a Glance," who gives the population, revenue, expenditure, army, and navy, of every country at a glance, is no mean benefactor to those who need such knowledge, and has much to do with the reputation for talent and industry gained by many men by their readiness at handling millions, and comparing great things. We think a good history of any country, "abridged for the use of schools," is a boon, and dispenses with the necessity for reading much that occurred years ago, and is not very important now.

Mr. Gooding seems to be ambitious to rank among the benefactors of the poultry world, and has abridged the poultry books, condensing their information. He is bold in his labours, inasmuch as he challenges the best judges to impugn his correctness in any particular. We believe we could point out inaccuracies, but we would rather speak of the whole as a useful sheet and guide for the young amateur, enabling him at a glance and in a minute to see the merits or deficiencies of his pets. He goes well into Pigeons; but we could not refrain a smile when at the end of the Rabbits we find the "Welsh Rabbit." It is said to weigh from 8 to 12 lbs.; we confess we do not know it. We think Mr. Gooding might give us some instructions about food, as to quantity and quality; also a few hints indicating the necessary treatment of fowls in health and disease. Until we obtain all this, we wish him a good sale for his present sheet.

AN UNLUCKY APIARY.

Having been a bee-keeper on a small scale for about five years without taking much trouble to comprehend my little labourers intimately, I last year thought I would make a grand effort to become a scientific apiarian.

In February last I became the purchaser of twenty stocks in a miscellaneous collection of hives (making with my original ones twenty-three), some strong in bees, but, apparently, all weak in honey. I set to work at once, and built a commodious bee-house, dry, light, and airy, and ensconced my hives therein. My next move was to make half a dozen Woodbury hives, to which I thought I could transfer some of the weak stocks. The hives made, now came the trial of driving. Following Mr. Woodbury's directions, I succeeded very well; in most instances I saw the queen in her transit. I made no failures; sometimes I found the bees very obstinate, but as I did not intend to be beaten, I took out the combs, and brushed the bees off. The combs were then fixed into the frames with wires, &c., and left for their proprietors to repair, a bottle of syrup being placed on the top of each hive, and all made snug.

Now came the first hitch, the syrup was of but little attraction, and the bees made no efforts to fix the combs for some weeks, and then, after making good the damage, some deserted the hives entirely, while others did not attempt to take in the food, and died eventually of starvation. My other hives, which I had not meddled with, fared no better; and although I liberally supplied the syrup, by May my twenty-three stocks were reduced to eleven. Not discouraged, I trusted to repair damages by good manipulation in the way of artificial swarming. As soon as the bees began to hang out I proceeded to drive the artificial swarms. Here again, following the "Devonshire Bee-keeper's" instructions, I found no difficulty, and soon became so expert that I could dispense with the close junctions of the hives, and drive openly. My bee-house soon became populous again, containing then about twenty-five hives; but things did not yet go smoothly, the hives were constantly being plundered and deserted; one hive especially, a Neighbour's cottage, I stocked four times, and still have it empty. On some of the hives, apparently strong, I placed supers, but only one supplied about 5 lbs. of honey.

July now came, and a month's absence occasioned by other avocations, coupled with a severe illness, caused my bees to be left to their own resources, and on my next examination I found five hives minus their inhabitants. Such desertions continued till late in the autumn, when the result of the season was that I was left with fourteen stocks, besides three which I had disposed of, and 19 lbs. of honey; and not more than a third of my stocks had a full store. This was the more annoying to me, as I had been trying to impress the merits of modern bee-keeping on some of my neighbours of the old school, and when I find that a cottager adjacent with about eight stocks has on the fire-and-brimstone principle secured upwards of 100 lbs. of honey and an increase of bees, it seems good evidence against scientific bee-keeping.

However, I think *Nil desperandum* a very good motto, and I do not surrender yet, so have begun to prepare for another campaign. Last December I purchased four hives for a trifle, strong in bees and honey, but with all the combs broken loose, and to their last owner unmanagable; some person had, apparently from malice, tried to destroy the whole. The day I received them was raw, cold, and foggy, but as the case would not admit of delay, I drove them all into straw hives full of empty combs, and fed them with the bottle, to which they took kindly; their old combs, mostly full of honey, I intend fixing into Woodbury frames, and then to re-transfer the bees. I should have domiciled them in these hives at once, but had none ready.

My bee-house now contains eighteen stocks, twelve of which by the spring will be in Woodbury hives, and I intend another fair trial, trusting with experience gained to be more successful this year; but I should like to ask some of your more experienced apiarians if they can point out any probable cause of the wholesale desertions from my hives. I may say that all my straw hives were in good condition, and none new. The new wooden ones were made of inch deal, old stuff, so that there should be little smell of turpentine.

In conclusion I may say that two years ago I should never have thought it possible that I could have managed to manipulate my bees in the manner I have. I have come to the conclusion that the great desiderata are courage and coolness. As an instance I may say that my little son, eight years old, has several times, perfectly unprotected, assisted me when driving by holding the empty hive, and has come to no harm thereby.—Nil Desperandum.

[This is a good illustration of the mistake committed by endeavouring to "run before you are able to walk." Had you felt your way, and advanced cautiously step by step, you would have saved yourself much trouble and disappointment. The cause of your first failure is evident enough; you attempted the transfer into frame hives too early in the season, before the bees were sufficiently numerous to set to work with spirit in the reparation of damages, and whilst the weather was not only so chilly as to render it difficult for them to do so, but actually so cold as to compel some of them to starve through inability to appropriate the contents of their bottle-feeders. The causes of the subsequent failures and of the wholesale desertion of your hives are not so apparent from your description, and might probably remain obscure, even if you entered into more minute particulars; yet we have no doubt whatever that they arose from mistakes attributable to inexperience, which would not have been committed by an accomplished apiarian, and which future practice will enable you to avoid. Such experience as yours says really nothing whatever against truly "scientific" bee-keeping, but merely proves that, like any other science, it cannot be mastered all at once without difficulty.]

Pollen-gathering at Christmas.—I saw pollen carried into one of my hives on Christmas-day, and many bees were, doubtless, busy in other hives; but the diminution of stores has been great. I may add that after the recent frost on January 6th the bees were busy carrying out young dead bees in every stage. The thermometer fell here to 10° Fahr. Another matter of importance is to warn apiarians to see that their bees are well supplied with food. The consumption of honey has been very great up to January 1st.—B. & W.

THE FOOD OF QUEENS.

I am not aware that the food of the queen in her larva state has received any more definite description than that it is "a peculiar substance." It being absolutely necessary that all experimentalists should understand as far as possible all matters with which they have to deal, I have been induced carefully to examine the food in all the royal cells at my disposal. These examinations proved to me that this white substance was prepared within the hive, and that it consisted of larvæ torn to pieces, and intermixed with honey. Its being an animal substance accounts for the queen arriving at maturity sooner than the workers.

To prove the above I have had some beat-outs rearing queens whilst confined in a dark room from the time the egg was deposited until the queen was hatched.—North.

IMPORTANCE OF THE BEE IN THE ECONOMY OF NATURE.

A few years ago a tropical papilionaceous plant was imported to the Jardin des Plantes, Paris, for the purpose of acclimatisation. (The clover, the pea, the bean and the locust tree all belong to the same natural order.) To the great delight of the gardeners the tree grew and blossomed; but as it belonged to a species of which each plant produces only either male or female blossoms, and this one bore only female blossoms, there was nothing to be admired on this tree besides the blossoms. Thus a few years passed away, when the tree, to the great astonishment of its admirers, bore fruit also. This would have been a miracle, were the opinion correct that bees are not instrumental in the fertilisation of plants. But the *savans* of the Jardin des Plantes were not inclined to believe in such miracles. They had come to the incontrovertible conclusion that there must be growing in Paris a male specimen of this plant; but they could not see clearly how the pollen had reached the female blossoms of the tree in the Jardin des Plantes. They made every possible effort to discover at least the location of the male specimen. Every garden of the neighbourhood was searched, inquiries set on foot in the papers, but nothing could be discovered. At last the director of the Jardin des Plantes had a lucky idea. He asked the police to assist him in finding this hidden son of the vegetable kingdom. Every policeman was provided with a description of the plant, and now commenced the most harmless search which probably ever took place in Paris. The police proved themselves worthy of their reputation. At the distance of about half an hour's walk the only male specimen of this plant in Paris was found in the garden of a rich gentleman. That the tree in the Jardin des Plants had in all probability been fertilised from this one was made plain by the statement of the proprietor that his plant had blossomed this year for the first time. In order to ascertain how impregnation had taken place, the tree was watched closely next spring in blossoming time, and nothing was seen but bees flying to and fro among the blossoms. They had here covered themselves with the pollen, had flown thence to the Jardin des Plantes, and thus effected fertilisation. Some might be inclined to say that "perhaps the wind did it." The wind certainly does its part towards the fertilisation of plants, especially if they stand in close masses like rye, wheat, corn, &c., but in this instance it would have been impossible for the wind to carry the small amount of pollen over intervening gardens and houses, and to communicate it to the female blossoms of the tree in the Jardin des Plantes.—(*American Bee Gazette.*)

OUR LETTER BOX.

Grey Dorkings and Brahma Pootras (*Constant Reader of Our Journal*).—We do not advise you to mix your birds, nor do we think it should be troublesome to keep them separate. As the Dorkings must have a run, and as the Brahmas can dispense with it, we advise you to let the Dorkings out almost always and the Brahmas now and then. Let the Dorkings go out every day, and the Brahmas every other day, from daybreak to mid-day. We do so ourselves, and the birds become so used to it that there is not the least trouble in the process. You do not want the Dorking cocks for change of blood, but you want them because twenty pullets are too many to run with one cock. You have had neighbour's fare as regards eggs. No one has had any, but your pullets ought to lay now.

Mortality among Fowls (*J. P.*).—We have heard of no such disease as you mention. There will always be mortality during very hard frost, and still more when the earth is for a long time covered with snow. We believe the birds which died in numbers must have eaten some violent poison, or Ducks, Geese, and fowls would not have shared the same fate.

Golden-pencilled Hamburgh Cock's Tail (*Novice*).—The tail of a Golden-pencilled Hamburgh cock is an important part of his plumage, and it is therefore necessary it should be entire. The most important feathers are the sickles, because they require to be accurately bronzed on their whole length. If, then, one is missing, it always gives the idea that it has been removed for some fault or shortcoming. They should be above the other feathers, and, describing a graceful curve, they should hang below them.

Newport Poultry Show (*Hamburgh*).—It is not a subject for publication. Write to the Traffic Manager of the railway for information.

Proportion of Cocks to Hens (*Firefly*).—One cock is not sufficient for twenty hens. If you have two they will fight, but when it is known which is the master the beaten bird will take some hens and go off with them. If, however, you object to this, we advise you to let one run with the hens in the morning, the other in the afternoon. This may and will answer, but not so effectually as if both were with the hens. It is very important both should be with them when they leave the house in the morning.

Ears of Lop-eared Rabbits (*A Rabbit Fancier*).—They are often exhibited with ears 23 inches long from tip to tip. If you send seven postage stamps with your direction you can have "The Rabbit Book" free by post. It contains much that you ought to know.

Aged Birds—Cross-breeding (*C. Ellis*).—We do not perceive that your statement alters what we stated. It is certain that after three years old hens become more and more defective as layers. As for fowls cross-bred between Houdans and Spanish being good sitters, your experience is an exception to the rule.

Confined Space (*J. R. Beyton*).—A space 60 feet by 25 is a confined space for poultry. Brahma Pootras or Dark Cochin-Chinas would be the preferable kind to keep in it.

Profitable Poultry-keeping (*Mrs. H.*).—If properly managed they can be kept profitably.

Poultry Food (*D. J.*).—Give the bruised oats, but omit the maize and buckwheat, and instead of barley give a little barleymeal once daily. The scraps, &c., are quite admissible. In your confined space the great danger to fowls is over-fatness.

Cochin-China Cock Paralysed (*E. B.*)—The giddiness, "floundering about," and loss of the use of one leg, indicate that a blood-vessel has ruptured on the brain. The bird probably is over-fat. Perfect quietude and nourishing diet given sparingly, and a little at a time, will give him the best chance of recovery.

Book about Game Cocks (*C. Francis*).—Cooper's volume on this subject has long been out of print, and can only be met with at second-hand booksellers.

Cork Poultry Show.—We are informed that Mr. Cooper took first prize in White-crested Polands, not Mr. Williams.

Rabbit-judging at Halifax (*J. Taylor*).—All that you say may be true, and yet the Judge might be justified in disqualifying your Rabbit on account of its defective eye. We cannot publish vague suspicions.

Rabbits (*Himalayan*).—If no age is specified in the schedule, we see no reason why young and old may not be exhibited in the same class. In fact, specifying ages induces deception.

Foul Brood in a Purchased Stock (*J. B., Bracken Hill*).—We regret to say that the bit of comb which accompanied your letter contained unmistakeable foul brood. It is very unfortunate that you should have transferred any of the combs to other stocks, since it is more than probable that they also will become diseased. As a considerable time may elapse before this point can be determined with certainty, we should advise their being isolated from all others as far as possible, and on no account should any of their combs be interchanged with or introduced into other hives. It will, we think, be better to return the defunct hive with its remaining contents to the respectable firm from whom you obtained it, and ask them to refund the money, in preference to running the risk of receiving another colony from an infected apiary. The fact of these so-called Ligurian bees turning out to be hybrids sufficiently accounts for their irascibility.

Boxes for Hives (*B.*).—Your boxes, 16 inches in diameter and 7 inches deep, are not too large for stock hives, but a hard wood like ash being a good conductor of heat, will require extra protection in winter. As the hives are likely to be sent to the moors, we should put sticks across the interior in order to support the combs. We prefer side slits to a central aperture for supering.

Wooden-topped Straw Hives (*A. K. H., Westhorpe*).—John Hockins, Esq., of Bathampton, Bath, would be glad to communicate with you on the above subject.

Birds for an Aviary (*R. G.*).—About twenty-six birds might be conveniently kept in an aviary 12 feet long, 9 feet wide, and 7 feet high. Those requiring the same mixture of food are the following:—One pair of Undulated Paraquets, one pair of Red-faced Love Birds, one pair of Whydah Birds, two pairs of Grenadier Buntings, two pairs of Waxbills, one pair of Cardinals, one pair of Red-headed Cardinals, one pair of Virginian Nightingales, one pair of Glossy Thrushes, and two pairs of Weaver Birds. This time of the year is best to purchase them, as they will be in good condition by the summer. For food give canary seed, millet, hemp, a few crumbs of bread, a little chopped meat, mealworms, and other insects, green food, such as chickweed, watercress, and lettuce; water and gravel of course.

Gold Fish—Pairing Canaries (*W. H. H.*).—The white fungus on gold fish is a parasitic disease to which they are subject when confined in small ponds, and which is difficult to cure. Wash them over with a weak mixture of common salt and water (4 ozs. to a gallon of water). We have known several instances where that has proved successful. The best time for pairing Canaries for breeding is about the middle or end of March, according to the mildness of the season. Separate breeding cages are far preferable to a room; the young birds become much stronger and more healthy.

POULTRY MARKET.—February 13.

Our Game season is over, and we may now soon look for a larger consumption of poultry. Judging from our own experience, we expect a poor supply of young poultry for a time, and consequent high prices. We believe the stock of young chickens to be unusually small. The Game season has been an average one as regards Pheasants. Partridges were very scarce till the snow came; that is their time of danger, and thousands were killed. Hares have been scarce throughout. Grouse and Woodcocks have been sent up in numbers far exceeding any other year.

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 21—27, 1867.	Average Temperatnre near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
21	Th	Sun's declination 10° 37′ s.	46.3	32.1	38.2	19	5 af 7	23 af 5	54 8	6 af 8	17	19 53	52
22	F	Acacia armata.	46.4	31.8	39.1	18	3 7	25 5	1 10	32 8	18	13 46	53
23	S	Bossiæa ovata.	47.0	31.7	39.3	14	1 7	26 5	6 11	53 8	19	13 38	54
24	Sun	Sexages. Sunday. St. Matthias.	46.7	32.4	39.6	19	59 6	28 5	morn.	26 9	20	13 29	55
25	M	Camellia Colvilli.	47.3	32.5	39.9	20	57 6	30 5	9 0	57 9	21	13 20	56
26	Tu	Erica vernalis.	47.1	33.3	40.2	21	55 6	32 5	9 1	31 10	☾	13 10	57
27	W	Dryandra armata.	48.0	33.6	40.8	19	53 6	34 5	6 2	10 11	23	12 59	58

From observations taken near London during the last forty years, the average day temperature of the week is 47.0°; and its night temperature 32.5°. The greatest heat was 58°, on the 21st, 1845 and 1859; and the lowest cold 13°, on the 24th, 1850. The greatest fall of rain was 0.92 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

VERBENA CULTURE.

FOR repotting and preparing the store plants of Verbenas for propagation the present is a favourable time. One of the most important points to be attended to in increasing a stock of Verbenas, and that most likely to insure success, is to have the plants in a good healthy state of growth before taking the cuttings from them. If a sickly cutting is employed for propagation there is every probability that the plant produced from it will be sickly, unless it is grown under favourable circumstances; even then it will not assume a healthy character like a plant that has been propagated from a healthy stock, and it is more liable to the attacks of several kinds of insects. If the cutting is taken from a plant in perfect health it will strike in half the time that is generally necessary to strike one that has been taken from an unhealthy plant.

My stock plants are always struck and kept through the winter in small 60-sized pots. The cuttings are put in early in September in a cold frame, and plunged in cocoa-nut refuse; a two-light box is generally used for this purpose, and the tops of the cuttings, when the pots are plunged, are within an inch or two of the glass. When there is no wind or sun the lights are taken off; also at night, if there is a probability of a heavy dew occurring, and no wind is apprehended. If there is a gentle shower during the day the lights are also removed, the object being to keep the cuttings from flagging. If they are carefully treated in this way few will fail in striking. I generally put eight cuttings in each pot. As soon as the cuttings are rooted they will begin to grow, when their tops should be immediately pinched out, and when they have well filled the pots with roots, they should be removed to another frame, and more room should be given to prevent their drawing up weakly. They must still be kept as near the glass as possible, and on no account must they be allowed to suffer from want of water. On the first appearance of green fly no time must be lost in fumigating, and as soon as each shoot has made three pairs of leaves it should be stopped. This treatment should be carried out all through the winter months, and a fine stock of handsome bushy plants will be the reward for the extra care.

The best place to keep the plants through the winter is a front shelf in a cool greenhouse, where they can have the benefit of light and air; they must be kept as cool as possible from October to February, when they should be repotted and placed in heat, where they will soon produce large numbers of shoots in the very best condition for propagating.

Having described in as few words as possible the proper winter treatment for the Verbena, I will now state the care the plants and cuttings receive from this time till they are planted out in May or June.

The soil most suitable is a good turfy loam mixed with a small portion of sand and leaf soil; it should be in a good healthy state, neither too wet nor too dry, and instead of rubbing it through a sieve it is better to pull the sod to pieces with the hand. The plants should also be in a nice state at the time, neither too wet nor too dry; if the old soil in which the plants have been growing through the winter and the new soil to be used now are as nearly as possible in the same condition as regards moisture, there will be no necessity for watering the plants soon after potting; if they be slightly sprinkled overhead with the syringe once or twice during the day it will be sufficient to keep them from flagging. This treatment will cause the roots to strike into the new soil much more quickly. I consider it a very bad practice to deluge a plant of any kind with water directly after potting, and for this reason—the soil often becomes sour in consequence, and the plant will not so readily strike root into it; but, on the other hand, if both soils are in a proper state of moisture at the time of potting, root-action will immediately commence, and by the time the plant will actually want water at the roots these will have reached the sides of the pot, when it may be copiously supplied with water if the weather should be bright or the temperature high. The pots I use at this time are 48's; these should be well drained. After turning the plants out of the small 60-pots the first proceeding should be to scrape the drainage away from the roots; then squeeze the ball gently in the hand to loosen the soil from the roots. If the ball is then shaken a little some of the small particles of worn-out soil will easily fall away. The ball should next be gradually opened out; this is done by making a hole through the centre of it, and gently pulling it out from the centre with the fingers. A portion of the new soil can by this means be placed in the centre of the old mass of roots and soil. This offers fresh food to the roots on every side, and there is no fear of the old ball becoming dry owing to the water passing through the loose soil at the sides, which is often the case where the roots are very much matted together, and when the precaution is not taken to properly disentangle them. Before pressing the soil firmly about the roots the pot should be tapped several times on the bench; this will settle the soil well about them. The operation may then be completed by firmly pressing the soil round the sides of the pot, and also in the centre of the ball.

After the plants have been potted, they should be placed in a temperature of 65° or 70°, and as near the glass as possible, to prevent their drawing up weakly. Here they will produce abundance of fine healthy shoots for cuttings; two or three crops may be taken from them weekly if proper care be exercised in taking the cuttings. A good sharp pair of scissors is the best instrument for this purpose; with such you may cut the shoot out just above the next pair of leaves. The space from the base of the cutting to its first pair of leaves will be long enough to insert in the soil, and in putting in the cuttings these leaves should not be covered

with the sand, for the eye at the base of the leaf is often injured when this is the case, and the loss of two good shoots is the consequence. The eye next to that part whence the cutting was taken will be the first to break. In taking the next crop of cuttings off care should be taken not to cut them off close to the stem, but to leave one pair of leaves below the cut. By this means the plant is extended in its growth, and the number of cuttings very much increased. The plant also matures the leaves that are left on it; these prevent its suffering injury by the constant cropping of its young shoots, and regulate the reciprocal action of root and branch, which enables the plant to produce a vast number of cuttings without suffering any ill effects.

As soon as the plants have well filled their pots with roots they may be watered with liquid manure three or four times every week; this will cause them to produce fine healthy cuttings. The same plants may be worked at this rate from February to May, and will not show any signs of exhaustion if they are liberally supplied with liquid manure; this, however, should be applied in a clear state. Guano I find the most suitable for them.

It will be seen by the above that it is not necessary to keep a large number of plants of each kind of Verbena through the winter. Six good plants of a kind will be enough to work a stock of two thousand plants from. It is a good plan to strike in May a small cutting-potful of any choice kind that will not strike readily in the autumn. If the plants are potted off in small pots, plunged in some place partially shaded from the sun, kept pinched in rather closely, and then shaken out and potted in large 60-pots towards the end of July, they will make fine stock plants, and may be easily kept through the winter. This is, perhaps, the safest way, for sometimes it is difficult to obtain good cuttings in the autumn.—J. Wills.

VINE AND OTHER WALL-TREE BORDERS.

Having read the different articles, by Mr. Wills and others, which have appeared lately on making Vine borders, I have been induced to offer a few remarks on the subject, and on fruit-tree borders generally.

I must confess I was somewhat surprised when I read Mr. Wills's article, and found him advocating borders 5 feet deep (that depth being so much greater than has been recommended by some of our best Grape-growers, Mr. Thomson and others), and at a time when there has been so much said in favour of shallow borders for fruit trees generally. Now, I do not assert that Mr. Wills is wrong, for I am one of those who believe that good Grapes can be grown in many ways; but I cannot see clearly the great use of supplying roots with food 5 feet from the surface. I am in favour of borders of a medium depth, say 2½ or 3 feet for Vines, and 2 feet for most other wall trees. I quite agree with "Vitis" as regards top-dressings; I have adopted them for many years, and I think they cannot be too highly recommended. To attract roots to the surface by feeding them cannot fail to produce the most favourable results, and there will be but little danger of their going down into bad soil. I am no great advocate for concrete at the bottom of Vine or other borders; there may be some cases where it would be necessary, but I have never used it. I think if there is water below it should be carried off by deep draining; but in all cases I would use drainage for Vine borders, whether inside or outside.

The drainage I use for Vines is formed as follows:—7 or 8 inches of broken brick or other rubble, 1 inch of fine gravel, with the dust taken out, and about 1½ inch of coal ashes made smooth and firm; then the compost, consisting of such materials as often recommended—namely, good turfy loam, farmyard manure, lime rubbish, bones, and charcoal.

I will now make a few remarks about stratified borders. I think Mr. Wills's two-inch layers of bones, &c., likely to be useful. I once made some borders on the stratified system, not for Vines, but wall-fruit trees of all kinds excepting Pears. In the year 1848 I took charge of a garden where the walls had to be refurnished as soon as possible. The soil of the garden was very unfavourable to fruit trees generally, and having a limited quantity of good loam at command I adopted a system once recommended by Mr. Errington. Stations, 8 feet square, were marked out for the trees, and the soil excavated to the depth of 30 inches; then the drainage, the same as described for Vines, was put in, and the station filled in to within 6 inches of the top with loam and fresh stable-litter in alternate layers, three of each. The tree was then put in its position, a layer of leaf mould 5 or 6 inches deep placed over the roots, and over this a little loam. These stations were kept covered with stable-litter during the summer, and received a surface-dressing of old hotbed manure or rotten leaves annually, or when it was thought necessary, and in the case of very dry weather a little water was given. The trees grew very fast, and as the roots were continually cut on the outside of the 8 feet, they soon became very fruitful.

I attribute a great part of the success to the quantity of rotten leaves put in with the trees and to the surface-dressings. The object in using the stable-litter in layers with the loam was to keep the latter a little more open, as nearly all the fibre was decomposed, it having been cut from a pasture some years previously.

In the autumn of 1861 all these fine trees had to be removed to a new garden, and when taken up their roots were in a most healthy condition, and only in a few instances did we find any roots through the drainage, but the great bulk of them was near the surface. When spread out on the new border their appearance was excellent, especially in the case of the Cherries, for we could lay them in almost as regularly as the branches.

The site of the new garden was an old pasture, and the borders were formed as follows:—The sods were cut about 6 inches thick, and taken at once to form that portion of the border intended to be entirely devoted to the trees, which was 6 feet wide and 2 feet deep, without artificial drainage, excepting for Peaches, the subsoil being chalk. The sods were built up to the height of 18 inches or a little more; the last layer chopped and made smooth; it was then ready for the trees, which were planted with rotten leaves as before. I used one cartload to each tree. In this way I planted about eighty trees by the 20th of December; then the whole of the six-feet border was covered to the depth of 8 or 10 inches with stable-litter. In the following season the greater part of the trees set plenty of fruit; I thinned them out to about half a crop, and they were very fine, and of excellent flavour. The Peaches were the finest I ever grew out of doors.—W. R.

JUNIPERUS RECURVA.

I observe in the Journal of the 25th of December, page 480, that Mr. J. Sharp wishes for information respecting Juniperus recurva.

In cool soils it is not liable to the attacks of the red spider, and there it is a very graceful and beautiful drooping plant; but it becomes so rusty and unhealthy in dry, warm soils, as to be useless. For this I know of no remedy, as both it and Juniperus recurva densa require a cool, shady situation, owing to their liability to red spider. I would replace it with Juniperus virginiana, virginiana pendula viridis, or with Juniperus phœnicea.—F. Flitton.

HARDINESS OF FARFUGIUM GRANDE.

I have long entertained the belief that this plant is perfectly hardy.

On the 23rd of February, 1857, a young plant of it was planted in a south border in a garden in Warwickshire, in which I was then engaged. There was some sharp weather afterwards, but the plant was not injured. In 1865, having a specimen under my charge that was growing rather too large for the conservatory, I decided on placing it out of doors to test its hardiness. The position assigned to it was an angle formed by the end of the stove and a wall dividing the frame-ground from the kitchen garden, the aspect of which was south. The plant, in a pot 18 inches deep and 21 inches in diameter, was placed in this position, and remained there until last week. The winter of 1865-6, was very mild here; the lowest point registered was 23°, until the 1st of March, when the thermometer stood at 11°, yet the Farfugium was uninjured although quite exposed; and in the summer of last year it was a fine specimen both in size and colour, being nearly 5 feet in diameter and beautifully blotched.

This year we were destined to experience a more severe winter. The year opened with the thermometer at 11°. This was followed by two days of similar intensity, one at 12° and one at 9°. The Farfugium all this time was perfectly exposed without covering of any kind, and must have been frozen quite through the ball. I thought this more than enough, and that more unkindness would be wilful murder, so after a slight

thaw I had some litter thrown over it. After this the frost was as sharp as ever. Last week I turned the plant out of its pot, and after deciding to use it for a sub-tropical border this summer, I divided it into sixty good solid crowns, all of which are showing life, and I have no doubt will make fine plants by next June.

In the Farfugium, then, we have a variegated-foliaged plant of no mean merit and quite hardy, therefore of much value to the gardener; for who amongst us does not feel the want of plants which will prove effective in the summer and yet not occupy our valuable space in the spring? One remark about culture. Use fresh-cut loam with plenty of sand. Rich soils and manure water turn the foliage green.—Geo. Boyes, *Barley Thorpe Gardens, Rutland.*

VISITS TO GARDENS PUBLIC AND PRIVATE

The Denbies, Dorking, the Seat of Mrs. Cubitt.

In visiting many fine places one has the feeling oftentimes that everything has been sacrificed to show, and that the wishes of the proprietor have given way to the exigencies of appearance—that the gardens are show places, but nothing more, and that the owner has very little enjoyment in them. Certainly this is not the case at the Denbies, for one would at once say, The owner of this place loves flowers and plants, and, what is more than that, has taken every means for the enjoyment of that love in the most agreeable way possible; and although my visit was a very hurried one, quite insufficient to do justice to the admirable manner in which every department of the garden is carried on under the able management of Mr. Drewett, I yet saw enough to convince me that in few places is there more real enjoyment for the owner than here.

The valley of the Mole, in which Dorking is situated, affords to the lover of genuine English scenery a charming sample of it, and that in the immediate neighbourhood of our great metropolis. An hour from London brings you into the heart of it, and there Nature and Art combined have done their best to gratify all lovers of rich, rural scenery. Dorking itself is a classic name to the English horticulturist, for Mr. Ivery, of that place, by the zeal and skill with which he and his foreman Mr. Appleby have carried on the cultivation and production of Azaleas and British Ferns, has made it so. When I paid my visit there in August the time for both was well-nigh over. Azaleas were of course out of doors, and Ferns were past their prime. However, I saw many of the newer varieties, such as Polystichum angulare parvissimum, which bears the same relation to the species that Lastrea Filix-mas crispa does to Lastrea Filix-mas. Then Polystichum angulare Wakeleyanum and P. aculeatum acrocladon were very interesting, the latter being the only one of this species which is tasselled. Of the Lady Ferns, Elworthii, Vernoniæ, Victoriæ, Iveryanum, and Frizelliæ nanum were all beautiful; but, in truth, the variations of these Ferns are endless, and one must only allude to them in the hope that the gratification that all lovers of Ferns can have at Dorking may be more sought after. There is always something new there, and what is not new is very admirable, the manner in which these Ferns are grown; their verdure and beauty exciting quite as much interest as if they were covered with brilliant flowers.

Having strolled through Messrs. Ivery's grounds, I then made my way up the hill on the opposite side of the valley, under the guidance of Mr. Appleby, to the Denbies, a place of which I had often heard, and which I had long been anxious to see. I need hardly say, what every one knows too well, that last season was about as bad a one as the lovers of gardening have ever had to contend with; nevertheless there was very much to see and admire. The situation of the house is charming—on the very summit of the hill, commanding a lovely view of both sides of the valley; on the one side enabling you to see far into Kent, and on the other away over Guildford, &c. It is also beautifully surrounded by fine trees, and in one part of the grounds there is the most lovely fernery that I have for a long while seen, the plants growing in the greatest luxuriance in the most natural way possible, and comprising some of the best of the many beautiful varieties of British Ferns, which are now so well known. Round the house—and this I look upon as the distinguishing feature of the place—runs a glass arcade 400 yards in length. You can enter into it through the conservatory from the dwelling-house, and not only enjoy an extended promenade in all weathers, in that which is truly a winter garden, but from it various plant-houses branch off, so that you can, without having to go out of doors, revel in all the beauties so liberally provided here. This arcade is literally covered with charming creepers of all kinds; Lapageria rosea, Escallonia rubra, Abelia floribunda, Plantago capensis, Banksian Roses, Habrothamnus fasciculatus, Cobæa scandens variegata, Gloire de Dijon Rose, the lovely Tacsonia Van-Volxemii, Bougainvillæa speciosa, Fuchsias, and a host of other plants covering the walls and roof. The Bougainvillæa is planted in a large slate box resting on the flues that warm one of the stoves; it is then brought out into an intermediate-house, which forms part of the arcade, and there produces its lovely bracts in great abundance. The Tacsonia deserves all the praise it has received, and nothing can be more lovely than those crimson parachutes suspended from the roof of the house. This is, doubtless, the way to see it in perfection, and from the manner of its growth here there does not seem to be any difficulty in its cultivation. In one of the houses branching off from the arcade there was a nice collection of fine-foliaged plants, and, which one does not often see in a private establishment, a very good collection of the plants of commerce, deeply interesting and instructive. The conservatory close to the house was, of course, very gay, Tacsonias covering a large portion of the roof; while on the walls at various heights were placed iron baskets with flowering plants.

Mr. Drewett is well known for the skill with which he cultivates Grapes, and his bunches, especially those of Muscats, have carried off many a prize. These were very fine, and I noticed that he had an air-chamber underneath the roots; but of Grape-growing it is hardly necessary for me to make remarks, so much has of late appeared on the subject in the pages of this Journal.

As I have already remarked, the season was most unfavourable for bedding-out plants; but there was evidence enough to show me that the Nosegay Pelargoniums do not endure the wet any better than the Zonale varieties, and that two bedding plants, about which there has been much dispute, do really deserve, in certain situations at least, all that can be said in their praise: one is Iresine Herbstii, the other Viola cornuta. The former, I dare say, is doubtful on wet soil and damp situations; but in dry places, such as the Denbies, it is beautiful, especially in the latter part of the season. Amaranthus is there "done for," Coleus shabby, but the Iresine charming. As to Viola cornuta, for a greyish blue border—an edging, for instance, for a bed of Mrs. Pollock, nothing can be more chaste; it continues, too, in flower for so long a period, some of it planted here having been successively in bloom until May. Amongst hints obtained was one of filling in a bed of Bijou, which is apt to be somewhat "leggy," with Cerastium tomentosum. In front of the greenhouses a capital border had been made of Dahlia Zelinda, Alba Multiflora, and Crystal Palace Scarlet; and in a season like the last the Dahlia, which seems to defy wet, was especially valuable.

Brief as the notice of my very hurried visit is, I feel it must not be closed without a reference to the exceeding care and attention bestowed by the owner, and seconded ably and heartily by Mr. Drewett, on the young men employed in the garden. A more comfortable arrangement than that provided for them cannot be imagined. Airy dormitories; good, clean, comfortable beds; places for their clothes; a library for them to read in, and means for cooking their food,—all these are as liberally provided for them as if they were the inmates of the house. Of what immense moral benefit this is none can better tell than those who, like myself, know what the young gardener often has to put up with—an untidy room in a house with a large family, where there is no quiet, and his only resource the public house and the demoralising influences of pot companions. All honour to those, then, who, like Mrs. Cubitt, believe that our influence for good or evil is sure to tell. Happy they who feel a pleasure in making it tell for good, and like mercy itself,

> "It is twice blessed—
> It blesseth him that gives and him that takes."

And I feel sure that in the interest which those employed feel in their employer such outlay is amply repaid. May many more follow the example.—D., *Deal.*

Edging for Garden Walks.—Let me recommend for this purpose paving-stones put down lengthwise. I tried this plan in Devonshire, and here in Warwickshire. Such an edging

looks well, is most durable, keeps its place, and is very inexpensive.—B. W. Stannus.

POTATOES.

I always read the Potato articles of "Upwards and Onwards" with great pleasure. Still, if I were to purchase all the Potatoes which he commends, I should have no room for Rosea.

I do not hold the doctrine of finality, or complete Potato perfection; still, as I am never without most excellent Potatoes "all the year round," I discard and introduce warily. I do not like turning off a servant whose faults I know for one whose faults I have yet to learn. I think we cry up and cry down commodities too hastily. Excellent Potatoes in certain years, and under certain circumstances, turn out occasionally bad. In the year 1865 nothing could be more close and ill-flavoured than the old Ashleaf; and in 1866 the excellent Royal Ashleaf sent out by Mr. Rivers, though good, was not equal to itself in the year 1865. For this reason it is well to grow more sorts than may be wanted.

As regards freedom from disease, it completely depends on circumstances. Some years ago the Rev. T. Case, the vicar of Horton, sent me the Red Ashleaf, warranted to defy disease. Alas! the tubers were complete pulp. The Grammars (a rough deep-eyed Fortyfold), very good this year, were given me by a blind parishioner under the name of "Rough Reds." Being a late variety I planted them very late, and they escaped the disease from which other Potatoes suffered much. The next year I planted them in a clover ley, on high, chalky ground, where no Potato had been planted for eleven years, and they were pulp. I must here ask "Upwards and Onwards" to tell me whether the blotches in the leaf are cause or effect. I fancy they are the effect of disease. Except electricity (not an idea of my own; I detest plagiarism unowned), I do not know what could in the year 1846 have affected the Potatoes over the whole world so instantaneously and synchronously. I have never yet been able to discover whether the attack in the first place was in the haulm, or roots and tubers. My present theory is (and I must admit that my theories hitherto have been fallacious), is that the visitation of 1846 weakened the cellular tissue, and that Potatoes have not yet recovered from it. Hence seedlings newly raised are frequently advertised as exempt from disease. When the disease broke out I was living at Critchill, and had an acre and half of Early Dugdale in a field which I rented of my late much-esteemed friend, Mr. Sturt, and I sold the crop, about half a crop—*i.e.*, a quarter of a sack a-perch, to him. They were supposed to have been one of the best crops in the neighbourhood—a good poor man's Potato. From that time to this I have been as much perplexed with the Potato disease as about fate. My "rule absolute" about the Potato disease has long been disowned by the chancery of facts, or the fortuitous concurrence of atoms. This being so, as I am but a "grasshopper" in the presence of "Upwards and Onwards," I wish he would tell me whether the ulcer on the leaf, the visible precursor of misery (for the cause may be beneath), is cause or effect. As soon as a medical man knows the disease and its seat, he may apply a proper remedy. Napoleon, at St. Helena, encouraged his doctor thus —"We are a machine made to live for a given time. You work in the dark, and thrust your crooked instruments into us, and for once that you relieve us you kill us a hundred times."

Now, I confess that I have been working in the dark, and I have this year thrust in a crooked instrument. I have planted, beginning February 12th, under grass, in stony land, 5 inches deep, dressed with dissolved vitriol, Grammars, Red Robins, Scotch Downs, or Rocks, and Salmon Kidneys, the best of all Potatoes. The vitriol may be useful if the disease is fungoid, for there is no better match for fungi of all kinds; or it may fail, the disease being of another nature, such as imperfect cellular tissue, or loss of starch, the grand component of a Potato. Still it is good as a revealer of bad Potatoes. My servant's testimony is, "You can tell the diseased tubers even where you can see no disease: they turn blackish within half an hour after application." He showed me one. I could see no disease; I cut the Potato open, and in the heart of the Potato there was the disease. It is also good to keep off centipedes, and other insects that live on and exhaust the tubers. I mean to keep this lot on the flat. I remember forty-five years ago my father had a grassed orchard dug up and planted with Potatoes. They were flat-hoed, but not earthed-up. The crop was larger than I have ever seen since.

I will now end with Stephen's testimony. "Steeve" is my servant, good and trusty, and this is his testimony — that round white Potatoes produce more than kidneys of any colour, that skulkers left in the ground all winter produce healthy Potatoes free from disease, that large tubers produce more than small Potatoes, that Potatoes about the size of a hen's egg will weigh 20 lbs. heavier per sack than large Potatoes, that early planting is best, that kidney Potatoes should not be cut or planted till the eye starts; that digging Potatoes before ripe is a double folly, it does not stop disease, and spoils what would, if ripened, be good; that Grammars will give a heavier crop with little or no manure than any other sort; and that though for years his Grammars were far sounder than any other, yet this year, out of three sacks stored away, he has not more than one bushel of good ones. The mystery of the Potato disease is, as yet, the great mystery of the natural world.

The kidney Potatoes, of the Ashleaf race, I shall plant in broken ground, and shall water them early in June.—W. F. Radclyffe, *Okeford Fitzpaine*.

HAS A FOREMAN ANY VOICE IN THE MANAGEMENT OF HIS FIRES?

I am living in a nobleman's large garden establishment as foreman. The 4th of February was a very wet day, but cleared off towards evening, and, the wind shifting, the stars gave a very bright appearance. Thinking it likely that a frost would occur, I had the fires in the greenhouses lighted.

I went to the glass houses about half an hour afterwards, found the thermometer standing at 39°, and I ordered the fire to be slackened. At the same time I had a vinery that had been started about three weeks, and in which the Vines had shoots about an inch long. This house was shut up in the afternoon at a temperature of 65°; on entering it at 8 P.M., I found the thermometer standing at 62°, with a little heat in the pipes. I banked my fire for the temperature to fall to about 55° by morning. My master coming out at the time altered all my doings for the night, and by his orders the stove fire was again set burning. The consequence was, on entering the vinery in the morning, a strong fiery heat was felt, and instead of finding the thermometer at 55°, it was then standing at 72°. The gardener coming in and finding the temperature so high, ordered air to be given very freely, and in an hour the house was standing at 62°. Do any of your readers think this was correctly treating an early vinery? I have lived in three other establishments as foreman, and never have seen a vinery treated in this manner before. From a garden boy I was always taught never to put air on for lowering the temperature, but to give it slowly as it was required, and to let the warmest time be in the middle of the day.—A Subscriber, H. M.

[The subject is not devoid of importance, but it is one always unpleasant to meddle with, as no general rule can be advanced as to the relative positions to be occupied by a gardener and his foreman and assistants, but each establishment must be left to form rules and regulations for itself. I have no hesitation, however, in submitting the following observations suggested by your case, looking upon it, however, as a one-sided statement:—

1. Whatever the abilities, the intelligence, and the attention of a foreman or an under gardener, so long as he remains in these positions it is his duty to carry out the wishes and commands of the head gardener, as he is the chief responsible party; just as it is the duty of the head gardener to serve his employer in the way he peculiarly wishes to be served, giving up so far any partialities of his own, to attend chiefly to that which an employer mostly values.

2. In large places matters will not go on well unless there is a reciprocal feeling between the head gardener and his assistants, and a general wish to make the most of the circumstances. I have no faith in the old dictum, addressed by a master to a man, "What business have you to think?" On the other hand, an assistant is valuable just in proportion as it is perceptible that he does think—that he acts from thought, and not from mere routine. I have faith also in the old statement that two or more are better than one, and in setting about a job the workman may propose a better mode than that at first pointed out by the master; and in such a case, if wise, the master will adopt the plan of the workman, because thus he will secure a thorough coadjutor, instead of a mere working, looking-to-the-clock man, and because, again, a man feels an interest in making his own plan appear the best by the less

time that it takes to carry it out. In all such cases, however, it should never be forgotten that the decision at last rests with the master, and when that decision is given an honest assistant will carefully carry it out, though it be not what he thinks the best under the circumstances.

3. The whole account of the management of the furnaces does you credit. Your examining the appearances of the sky, your noticing the outside thermometer and the changes since the last visit, your reading the thermometer inside the forcing-houses, and satisfying yourself as to the heat in the pipes or heating medium, are all very simple matters; but such it is very difficult to get young men to look upon as of much importance, and without attending to them the management of fires is a mere matter of chance. You showed also the necessary attention in lighting the greenhouse fires, and in such a case of overheating as that to which you refer, I would have preferred giving a very little air, damping the path and floor, and allowing the house to cool gradually.

4. While approving of your attention and consideration, I cannot for a moment give up the right and duty of the master to come to a different conclusion, and to express his wishes accordingly, so as to have some more heat in the pipes before banking the fires up; and I fear it must be added that he would have too much right to feel dissatisfied and annoyed, when, instead of the little more heat in such a changeable night as the 4th of February, there should be such a fiery heat in the house in the morning, and the thermometer about 17° higher than was deemed necessary. Such a result gives too much reason for the suspicion that, not thoroughly knowing your place as a servant, you were annoyed that your arrangements were in the least interfered with, and since heat was wanted, heat should be given, and in a pet you piled on the fuel careless of consequences. If I am right in this conclusion, then I would impress on you in all kindliness, that such outbursts of spleen and impatience of control will more than counterbalance your other good qualities—intelligence, diligence, and attention.—R. F.]

THE ROYAL HORTICULTURAL SOCIETY,

AND THE EXECUTIVE COMMITTEE OF THE INTERNATIONAL HORTICULTURAL EXHIBITION.

We are informed that at a meeting of the Executive Committee of the International Horticultural Exhibition, held on Thursday the 14th inst., the motion which was placed on the minutes at the meeting of the 20th of November last, was carried unanimously. Resolved—

"That a communication be made to the Commissioners of the Exhibition of 1851, informing them that the Committee of the International Horticultural Exhibition have now remaining a balance of eighteen hundred pounds (£1800), which sum they are willing to invest in the purchase of the Lindley library and other books, to form the foundation of a Botanical and Horticultural Library, to be attached to the Royal Horticultural Society, provided Her Majesty's Commissioners, who are interested in the advancement of the South Kensington estate, are willing to provide a suitable reading-room, with glass cases, for the reception of such library. The room and books to be for the use of Fellows of the Royal Horticultural Society, members of other societies, and gardeners generally, under such rules as may be agreed on. The Horticultural Society to nominate one of its officers or a clerk to look after the same. The room and library to be invested in the names of seven Trustees—two appointed by the Commissioners, two by the Royal Horticultural Society, two by the International Committee, and one by the six above named."

The above is the best reply that could be given to the conversation that took place at the annual meeting of the Royal Horticultural Society, a report of which appeared in our last number. It is now apparent that the proposal for the munificent donation which the International Committee have placed at the service of the Royal Horticultural Society has been on the minutes ever since the 20th of November last; and we were not wrong when we stated in our last that some misunderstanding must have existed on the subject, for we believe that on an interview having taken place between Sir Wentworth Dilke and Mr. Wilson Saunders, a perfect understanding was at once come to. It is much to be regretted that Mr. Edgar Bowring, who, as a member of the Expenses Committee, evidently came prepared to raise the question at the meeting, did not signify his intention to Sir Wentworth Dilke, who would no doubt have been in his place to make a full explanation, both on behalf of himself and of the Executive Committee, and thereby have prevented an impression going abroad that the International Committee did not intend doing anything for the Society with the surplus fund derived from the Exhibition.

It was perfectly natural that on such a subject the Fellows of the Society should desire to have some information, and we are not surprised that the question should have been raised, so that they might know the relation in which the Society stood to the International Committee.

And what was that relation? Looking at the correspondence and the documents that were published in our last, we gather that there was an understanding of a vague and indefinite character that the Committee were to do "something." To this both parties seem to assent, and in the correspondence both admit the principle. The minute of the Council says, "Should there be any surplus in the takings of the Committee, the liberality of the Royal Horticultural Society will be duly acknowledged." Sir Wentworth Dilke says, "In conversation something was said about doing something." Mr. Wilson Saunders says, "That Sir Wentworth Dilke, on the part of the Committee, acknowledged the principle, that in case of any surplus accruing to the International Horticultural Exhibition the Royal Horticultural Society should have a claim therein." Now, on the part of the International Committee the principle was accepted and acted upon so long ago as the 20th of November last, when the motion which was carried at the meeting on the 14th inst. was placed on the minutes. We cannot, therefore, but regard the action taken by Mr. Bowring as precipitate, particularly as allusion was made to the purchase of the Lindley library in the report of the Council, thereby indicating that the International Committee did intend to do "something."

ROYAL HORTICULTURAL SOCIETY.

February 19th.

Floral Committee.—This was a deeply interesting meeting from the number of the Orchids exhibited, among which were several of great beauty and rarity. A group of cut Orchids, from Mr. Anderson, of Meadow Bank, contained some species that are exceedingly rare, such as Batemannia Beaumontii, Epidendrum Cooperianum, Vanda gigantea, a beautiful Oncidium of great value, and Lælia superbiens; the latter having a magnificent bunch of flowers was awarded a special certificate. Mr. Rucker also exhibited a cut specimen of the last species, but in size and depth of colour it was far exceeded by Mr. Anderson's flower. Cut blooms of some Lycaste Skinneri were shown by Mr. C. Penny, gardener to H. H. Gibbs, Esq., of St. Dunstan's, Regent's Park, and were described by Mr. Bateman, as "the finest ever seen." They were of unusual size and beautifully marked, and were awarded a special certificate. Messrs. Veitch & Sons received a special certificate for a large and beautiful collection of Lycaste Skinneri, shown in honour of the memory of the late Mr. G. U. Skinner. It was remarkable how freely many of these had bloomed. Mr. Wilson, gardener to W. Marshall, Esq., of Clay Hill, Enfield, had a large group of Cattleya Warscewiczii, in varieties, some of them of great beauty, to which a special certificate was also awarded. The same award was made to Messrs. Low & Co., for collections of Lycaste Skinneri and Oncidiums, the latter containing some varieties of great interest. Dr. Pattison, of St. John's Wood, also received a special certificate for a collection of Orchids, among which was Odontoglossum species, a supposed variety of O. Warnerianum, and resembling O. Cervantesii. The same award was made to Messrs. E. G. Henderson & Son, for a group of Cyclamens, comprising varieties of C. persicum, coum, and Atkinsii. The former contained some marvellous flowers, of great depth of colour and large size. They were one-year-old seedling plants, and literally masses of bloom.

First-class certificates were awarded to Oncidium species, from Mexico, shown by Messrs. Low & Co., a new variety, having a great resemblance to O. pelicanum, without the brownish lines. The habit was very close and compact; to the same for Odontoglossum maculatum superbum, considered to be a very distinct variety, the dark colour being much deeper in this than in any other, the petals also being thick and broad, and to Messrs. James Garaway & Co., Durdham Down, Bristol, for the following varieties of seedling Amaryllis, a magnificent lot of which were produced by them, apparently seedlings from A. aulica and vittata—viz., Olivia, rich scarlet and crimson shaded, pure light throat; Cleopatra, bright orange scarlet, shaded and veined with glossy crimson, the colour reaching to the base of the segments; H. Gibbs, carmine crimson, the spine of the segments pure white and feathered with the same; and Helena, orange scarlet, with slight shading of crimson, dwarf habit, and of fine form. A second-class certificate was awarded for Juliet, bright orange scarlet, shaded with purplish crimson, and clear throat; and a special certificate to six plants of A. Ackermanni pulcherrima, also very rich.

Second-class certificates were awarded to a variety of Asplenium differme, from New Holland, shown by Messrs. Veitch—it was considered by the Committee to be a good basket Fern for a hardy greenhouse—and to Griffinia Blumaria, from Messrs. E. G. Henderson and Son. The small lanceolate foliage resembles that of Eucharis ama-

zonica. It is a shy bloomer, flowering only once in three or four years. A like award was made to Bryonopsis laciniosa, from Mr. W. Earley, of Digswell, having fragrant white blossoms with a curious thready fringe, resembling somewhat the flowers of the Snake Cucumber. It is said to produce berries, but will require crossing, as there did not appear to be any female flowers on the plant. It is an evergreen hothouse climber, and will be valuable for bouquets. Also to Oncidium species, from New Granada, in the way of O. sphacelatum, from Messrs. Low and Co. It has a good habit, and the flowers are very showy.

Special certificates were awarded the following:—To Mr. Sherratt, gardener to James Bateman, Esq., of Knypersley, for cut specimens, with fruit, of Citrus japonica, or Japanese Citron, from a warm greenhouse. The fruit is highly ornamental, and was said by Mr. Fortune to succeed better in the northern districts of China than in the southern. It was also thought that it might be cultivated out of doors in the warmer portions of the south and west of England. This Citron was originally sent to the Royal Horticultural Society in 1854. To a magnificent truss of Rhododendron argentea, from Mr. Squibbs, gardener to Mrs. Turner, Rook's Nest, Godstone, said to be of a purer colour than R. Falconeri, and to be the same as R. macrantha, from Bhotan, sent out by M. Van Houtte, of Ghent, a few years ago. To a splendid and well-grown specimen of Dendrobium speciosum, from Mr. Wilson, gardener to W. Marshall, Esq., Enfield, with four immense spikes of bloom. To Messrs. Veitch & Sons for a half-standard Aucuba japonica vera, in a tub, the plant being very symmetrical, and well covered with berries. The diameter of the specimen was about 2½ feet.

Other subjects of interest but which did not receive awards, were a species of Dendrobium, named by Mr. Bateman D. Bullerianum, resembling D. Devonianum without the fringe; it was considered doubtful whether it was a cross or a species; it came from W. W. Buller, Esq., of Strete Raleigh, Exeter, and was not in good condition: Odontoglosssum nebulosum var., from J. Day, Esq., of Edmonton, considered a good variety, but too far advanced to judge accurately of its merits; Begonia Earleysii, a supposed seedling from B. phyllomaniaca, larger than B. digswelliensis, but showing too much of the large green seed-pods, which detract from the attractiveness of the flowers; a large plant of Camellia Mathotinna, from Messrs. Veitch & Sons, the flowers of which were paler in colour than is usually seen; cut flowers of the old Canarina campanula, from Mr. Davis, gardener to W. Stride, Esq., Redbridge, Southampton; some plants of Fuchsia Cloth of Silver, a sport of a creamy-green colour, but too young to judge of its merits; Iresine Herbstii splendida, a well-coloured specimen of I. Herbstii, not distinct enough to be classed as a variety; and I. Herbstii aureo-reticulata, pale-green leaves veined with creamy yellow.

Fruit Committee.—Several collections of Apples were exhibited, among which one from Mr. Whiting, of the Deepdene, Dorking, obtained a special certificate; it comprised fine examples of Adams' Pearmain, Blenheim Pippin, and Alfriston. Mr. Parsons, gardener to W. J. Blake, Esq., Danesbury, had a similar award for numerous dishes in excellent condition, and among them Blenheim Pippin was especially fine, both in size and colour. Mr. Earley, Digswell contributed Sam Young, Cockle Pippin, Fearn's Pippin, and Dredge's Fame, as well as a very good dish of Ashmead's Kernel from Gloucestershire. T. Laxton, Esq., of Stamford, sent two seedling Apples, named respectively Stamford Pippin and Welland Pippin, neither of which, however, was considered of such merit as to deserve a certificate; and from Mr. T. Short, gardener to Viscount Eversley, Heckfield, Hants, came Melon Apple, a showy American variety of excellent quality, ripened on a half standard in an orchard. Mr. Sherratt, gardener to J. Bateman, Esq., Knypersley, exhibited the Kumquat (Citrus japonica), as produced on the plant, and received a special certificate; accompanying it were some of the preserved fruits as sold in the shops. Further reference to this small-fruited member of the Orange family will be made in the proceedings of the fortnightly meeting.

In the Vegetable department Mr. Earley exhibited excellent Shallots, and a good and rather numerous collection of Potatoes, the best of which appeared to be Hardcash, Queen's Own, Mona's Pride, Royal Ashleaf, and Myatt's Ashleaf Kidneys, and of Round varieties Giant King, Soden's Early Oxford, and Victoria. From Mr. Dean, seedsman, Ealing, came Fearnought Cabbage, from a garden in the south of Hampshire, where Broccoli and Kales were much injured by the severity of the late frost, whilst the Fearnought was scarcely touched. It is described as being the result of a cross between the Dwarf and the Hearting Kale. It is also stated to be a delicious table vegetable. M. Ernst Benary, of Erfurt, contributed large examples of Celeriac, which is much used in Germany; but they were pithy, and not good either raw, in salads, or boiled.

Fortnightly Meeting.—Mr. Bateman, in proposing that Mr. Wilson Saunders should take the chair, said that whilst all must regret the resignation of Earl Grosvenor as a member of Council, they could not but rejoice to learn that in accordance with the rules of the Society the Council had that day unanimously elected Mr. Wilson Saunders to fill the vacancy. Mr. Wilson Saunders having returned thanks the proceedings commenced with the election of twenty-four new members and the admission into union of six Societies—namely, the Chertsey and District Floral and Horticultural Society, East Neuk of Fife Horticultural Society, Elvetham, Eversley, Bramshill, Yateley, and Minley Horticultural Society; Largo Field Naturalists' Society; Neston, Burton, and Heswall Floral and Horticultural Society; and the Royal Jersey Agricultural and Horticultural Society.

The awards of the Floral and Fruit Committees having been reported, the Rev. M. J. Berkeley offered remarks on some of the plants exhibited and other subjects. Allusion was first made to a variety of Weeping Ash, which had the peculiarity of not producing seeds, but only polleniferous flowers, and then to the magnificent Saccolabium shown by Messrs. Veitch at the December meeting, and which was imported under the name of S. giganteum, but which had been considered almost identical with S. violaceum. This, however, was not the case, for in S. violaceum the lip is strap-shaped, whilst in S. giganteum it is orbicular, besides which several other structural differences were pointed out. The identity of Thuja gigantea with T. Lobbiana, and of the Thuja gigantea of gardens with Libocedrus decurrens, both of which facts are referred to in another page, was then stated, as well as Mr. Bause's success in propagating Chimonanthus grandiflorus. Messrs. Garaway's fine Amaryllises, and some plants from Mr. Wilson Saunders were then specially noticed; of some species of Sonchus from the latter gentleman, it was remarked that nothing could be more ornamental for table decoration. Of the Bryonopsis, shown by Mr. Earley, it was stated that the plant would afford a dozen fresh flowers every day, and was therefore valuable for bouquets, besides which, it was said to have showy crimson fruit, and was probably allied to the Bryonopsis erythrocarpa, which was so beautiful in the conservatory last year. The charming varieties of Cyclamens from Messrs. Henderson next occupied attention, and it was stated that raising such was a mere matter of chance, for out of a thousand seedlings not one, perhaps, would prove good; Mr. Berkeley also added that many of those exhibited had been raised from seed not two years ago. In connection with some Mushrooms which had been brought before the Fruit Committee, it was mentioned that they were not all Agaricus campestris, some appearing to belong to A. arvensis, and the importance of growers collecting spawn from places where Mushrooms are naturally finest, was urged, and in this way, too, there was every probability of an improvement being effected in the strain. The sad effects of the late frost were next touched upon, and no part of the country, Mr. Berkeley said, appeared to have suffered so much as the valley of the Thames, where extremely low temperatures were recorded. At Chiswick, for instance, the thermometer indicated — 11, at Slough — 8, and at Kew — 4; but there might be some doubt as to the perfect correctness of some of these indications. The damage done to vegetation had been very great. At Kew a large tree of Cupressus macrocarpa had become a wreck, Araucarias had suffered, and at Chiswick the largest Deodar had suffered severely, whilst the variety robusta was scarcely injured. It was noticed both at Kew and Chiswick, that where plants were covered with snow they were safe, and that the tips of branches bent down under the snow were unhurt, whilst the exposed parts were browned. Mr. Berkeley also stated that in some parts of the country trees were still suffering from the effects of the frost in the winter of 1860-61, having been injured in the stem. It would be interesting to obtain particulars as to what forest trees had been severely injured during the past frost.

Mr. Wilson Saunders considered that a great lesson was to be gained from the effects of the late frost, and particularly in respect to the great preservative action of snow. He then exhibited to the Meeting specimens of Deodars, Garrya elliptica, and other shrubs, showing how they had been affected where exposed, and that they were little, if at all, injured where covered with snow; and he remarked that many plants which will live in a very cold climate will be killed in this country because they have not the same snow covering. Variegated plants, too, will not stand cold so well as the original species; thus, he had specimens of the Irish Ivy, showing that to be uninjured, whilst the variegated Common Ivy was killed; the Common Periwinkle was hardy, but its variegated form would not stand cold, and the same with many other plants. It was also worthy of remark that plants of the same kind are not equally hardy in the same situation: hence in selecting plants it is very necessary to choose those having a good constitution.

Mr. Berkeley, in answer to a question put by Mr. Wilson Saunders, as to why the Deodar should suffer here, said that though the tree was subjected to an extreme degree of cold in its native country, yet before the frost set in there were cold rains, and growth was brought to a standstill; but in the valley of the Thames the trees before the last frost were full of sap.

Major Trevor Clarke desired to state that the late severe frost had enabled him to prove the entire hardiness of Disa grandiflora, a most interesting and beautiful African plant. He had had it out of doors for three winters on trial, and only needed such a test as the present year afforded. It would now become a most useful addition to our hardy plants.

Mr. Bateman said his duties with respect to the Orchids would be onerous, for there was quite an inundation of beautiful specimens of that order. Among Cattleyas the palm must be awarded to the variety from Mr. Barnett, of Blackheath. Mr. Anderson, gardener to T. Dawson, Esq., of Meadow Bank, near Glasgow, came next with a large number of rare and interesting kinds, many of them exhibited for the first time. Among them was Oncidium nubigenum, which, though it might appear insignificant, was not the less remarkable, for it had been found at an elevation greater than any other—namely, 14,000 feet

above the level of the sea. Then there was Batemannia Beaumontii, one of a genus named after him by Dr. Lindley; and he (Mr. Bateman), felt much gratified at the honour when the first species, B. Colleyi, was named; but unfortunately it had an unsavoury odour, and B. Beaumontii was worse still. Mr. Anderson also sent a splendid spike of Lælia superbiens, one of the grandest discoveries of his (Mr. Bateman's), lamented friend Mr. Skinner, who, when he found it, said it could be seen nearly a mile off in the clear atmosphere of its native country. The spike shown, he was happy to say, would be presented to Her Royal Highness the Duchess of Cambridge. Another specimen of the same Lælia, though not so fine, came from Mr. Rucker. A very fine specimen of Dendrobium speciosum, a plant which any one might grow, was sent by Mr. Wentworth Buller; also an interesting new Dendrobium, which he (Mr. Bateman), had ventured to call Dendrobium Bullerianum. There was also a new Odontoglossum from Messrs. Low, which would be figured in the "Botanical Magazine;" and from Mr. Wilson, gardener to W. Marshall, Esq., came some of the finest Cattleyas he had ever seen. He wished, however, to impress on those present that Cattleya pallida, Trianæi, quadricolor, Warscewiczii, and Wagneri were all varieties of one and the same species.

With regard to the Kumquat, Mr. Bateman said it had a peculiarly ornamental appearance where growing on the back of one of his stoves, or rather a warm greenhouse. On referring to an old number of THE COTTAGE GARDENER, he found that Mr. Beaton spoke of it thus:—"From the Garden of the Society came fruit of the Japan Citron (Citrus japonica); this is not the Mandarine Orange, or the Otaheite Orange, of which they make such pretty little standards, but the fruit is as small as that of any in the tribe, and of the shape of a small Ashleaf Kidney Potato; the rind is most fragrant, and the whole fruit is highly prized by the Chinese; when preserved in sugar they call it the Cum Quat." Mr. Fortune had sent him the following information:—

"I am well acquainted with the Kumquat, and have little doubt your plant was one of those, sent home by me to the Horticultural Society during my first visit to China (1843 to 1846). It is, I believe, the Citrus japonica, and is largely cultivated both in China and Japan. In China it attains a greater degree of perfection in the central provinces than it does in the more southern, and ought to be hardy, or nearly hardy in the south of England. Perhaps, however, a higher degree of summer heat may be necessary in order to have it in perfection with us. Of one thing you may be quite certain, it is much hardier than the Common Orange. The common China Orange is to be had in perfection in the south of China only, and is not cultivated in the district farther north, where the Kumquat grows so well. The bushes, 3 or 4 feet in height, are very beautiful in November and December when loaded with fruit, which ripens at this season of the year. All winter long the fruit is very plentiful in the markets. If you have tasted the fruit you will remark that the rind is sweet and of an aromatic flavour, while the pulp is very acrid. As a preserve it is much esteemed and largely used. It is exported in considerable quantity to Europe and America. I daresay you have frequently eaten it amongst those Chinese preserves sold by Fortnum, Mason & Co., and others."

The plant has this peculiarity—it cannot be propagated by cuttings, but must be grafted on another tree of the same kind—Limonia trifoliata; and, Mr. Bateman added, cuttings would be distributed.

This offer of cuttings called to his mind one made on a much more extended scale by a Mr. Hullett, who, in a paragraph in the *Times* headed "New Food," directed attention to the Chinese Sugar Grass, stated that it would produce five times as much as Wheat, that the stems could be used as cattle food, &c., and with unprecedented liberality offered a few grains to those who would send a stamped and directed envelope. Mr. Bateman had sent for some, but not in his own name, and received seeds along with a printed memorandum, one paragraph of which explains the whole of his object, and which is as follows:—"Seeds can be supplied in packets at 1*s.* or 5*s.* each." Now it was stated in the *Times* by Mr. Hullett that he had 9,000 applications, and in *Bell's Weekly Messenger* the number was given at 20,000; but as the seeds were nothing more than those of Sorghum saccharatum, or Holcus saccharatus, the whole quantity required to supply all the applicants could be had for about a shilling. One seedsman offered him (Mr. Bateman) 10,000 seeds wholesale for 4*d.* As to the Sorghum it had been tried in this country, and it was found that the summers are not warm enough to ripen its seed, and even Messrs. Sutton in the fine climate of Reading could not get it to succeed. For agricultural purposes it was found nearly valueless.

Mr. Bateman said that he now came to what to him was an exceedingly painful subject, the death of his friend Mr. Skinner, whose bright genial countenance was seldom absent from the Tuesday meetings. Mr. Bateman then gave a sketch of Mr. Skinner's life, the leading particulars of which have already appeared in these columns. It seems that Mr. Skinner in early life was desirous of entering the navy, but in deference to the wishes of his friends he took a situation in Messrs. Barclay's Bank. He afterwards was in business at Leeds, but finding an opening in the then little known republic of Guatemala, he went there, and soon entered into partnership with Mr. Klee, the Prussian Chargé d'Affaires. There he directed his attention chiefly to birds and insects before he took to gathering plants; but in consequence of some birds which he sent to the Museum at Manchester, Mr. Bateman ventured to send him some sketches of plants, and directions as to the mode of packing such for transmission to this country. Soon a box came, and along with many other new plants was Barkeria Skinneri. Other plants sent home by Mr Skinner were Lælia superbiens before alluded to, Odontoglossum pulchellum; but his crowning work was Lycaste Skinneri. "Happy, indeed, am I, far more happy than he would be," said Mr. Bateman, "that his name will live in it." It flowers in the coldest months of the year, and no plant is more useful or lasts better. Mr. Bateman next referred to the many specimens of birds which Mr. Skinner had sent home, and of which there were numerous examples with gorgeous plumage on the table. Mr. Bateman then gave an account of Mr. Skinner's death on the Isthmus of Panama from yellow fever, caught, it is believed in a fever-tainted ship, and said that Mr. Skinner had long been a widower, but had left two daughters and an aged mother to bewail his loss, and with whom he intended to have passed the evening of his days under the roof of his brother, the Rev. J. Skinner. His last letter was to Mr. Veitch, who had set aside a room, and was putting up a house for Mr. Skinner's collections.

Mr. Wilson Saunders proposed a vote of thanks to Mr. Bateman, which was unanimously accorded by one of the most crowded Tuesday meetings which have ever been held.

Among the visitors in the early part of the afternoon were their Royal Highnesses the Duchess of Cambridge and the Princess Mary.

A DEVOURER OF THE RED SPIDER.

HAVING frequently seen in THE JOURNAL OF HORTICULTURE inquiries as to the means of destroying the red spider and other insects, I beg to offer one which I discovered last summer. I had a favourite bird called the "Indigo Bird." My astonishment was great when I let him out of the cage, having for two years fed him on canary seed, to see him devouring insects of every description. The consequence was, I had no red spider, &c., on my Vines or in my greenhouse afterwards, for I frequently let the bird out of his cage to do his gardening work.

The bird is a beautiful blue in summer, but in the winter brown like a sparrow. The outside of my windows has wires, so that no bird can escape.—ST. LEONARDS.

BIRMINGHAM PRIZE POTATO.

ALL who know this excellent Potato are aware that it produces both round and kidney-shaped tubers, and my object in writing is to ask whether it cannot be shown at our exhibition of fruits, flowers, &c., in both classes of round and kidney-shaped?

It was so exhibited at our autumn show of last year, and carried off the prize in both classes. This gave rise to a paper war between two clever gardeners in the district, Mr. Simpson, of Stutton Rectory, and Mr. Sheppard, of Woolverstone. Mr. Simpson declared the Potato in question could not be shown, and carry off the prize in both classes, while Mr. Sheppard affirmed it could. Which of the two was right in the matter?—W. C., *Ipswich*.

[We think it could be shown in both classes. We cannot see any justice in excluding first-rate round Potatoes because the plant which produced them also produced first-rate kidney-shaped Potatoes, and *vice versâ*. The prizes are offered for round and kidney-shaped Potatoes respectively, without any such restriction as that they should not be grown on the same plants; nor is there any just reason why there should be such a restriction. It is desirable rather than otherwise, that a plant should produce tubers of various shapes, and if it produced the best round, kidney, and Lapstone-shaped tubers, we see no reason why its produce should not take a prize in each of the three classes.—EDS.]

THE INTENSE COLD AND ITS CONSEQUENCES.

HADDINGTON.—The snow having for some time disappeared and mild weather having intervened, I have been enabled to inspect my garden more minutely than when I last wrote to you. As I said before, we have not had such severe frost since the winter of 1860-61, and the damage to gardens has consequently been great. Much difference in the effects of the frost is apparent in localities at very short distances from each other, plants on elevated ground escaping with less injury, while those in low-lying places in the neighbourhood of a river or stream have suffered most severely. My garden is under the latter influence, and it is injured accordingly. Except where the spurs are in direct contact with the wall, all the flower-buds of Apricots are destroyed. Some Pear trees appear to have suffered in a similar manner, a good many of the buds being deprived of all vitality. A large proportion seem sound and well expanded, but whether the embryo fruit is destroyed re-

mains yet to be seen. Roses are severely cut down, Noisettes and Tea-scented in general to the snow-line. The universal favourite, Gloire de Dijon, looks as if it had more life in it than others, but appearances so early are often deceptive. Laurustinus and Bays above the snow, are, in general, altogether, and Berberis aquifolium partially browned; tree Pæonies are killed to the roots; and even the tops of Leeks, not covered with snow, are whiteued.—John Ferme.

Gillingham, Norfolk.—The thermometer used here is one of Messrs. Negretti & Zambra's, placed 4 feet from the ground, and facing the north. We are situated about fourteen miles from Great Yarmouth, and twelve from Lowestoft. The greatest cold was during the night of the 4th of January, it then fell to 2°, or 30° below freezing. I may mention a few things which have suffered from the effects—viz., a large quarter of Cabbages is entirely killed, also about two hundred of Backhouse's Winter Broccoli standing on a south border; other kinds of Broccoli have not suffered much. Monthly Roses are killed to the snow-mark. Sweet Bay, Laurustinus, common Laurels, Rhododendron Smithii, Garrya elliptica, Elæagnus argentea, and Ilex maderensis have all been much scorched. Of Roses, Lord Raglan, Celine Forestier, General Washington, and a few others are much blackened. — John Batters, *Gardener to Admiral Henry Eden.*

Stakehill, near Manchester.—From a thermometer carefully tested for correctness and hung with the bulb 2 feet from the ground, the lowest reading was 5°, 27° below freezing. From 10° to 12° was the reading on most eveninga. Except in the case of slight drifts, the snow was from 2 to 3 inches deep. The situation is bleak and much exposed on all sides, especially on the W. and S.W. The following plants have suffered:—Common Laurels, Portugal Laurels, Sweet Bays, Aucuba japonica, Cotoneaster, Cedrus deodara, and Picea lasiocarpa, leaves mostly brown and scorched in appearance; Japanese Privet, lost all its leaves; Golden Hollies, Berberis Darwinii, Berberis aquifolium, Wellingtonias, and Pinus excelsa, much injured in the foliage, but not so much as those before named; Cedar of Lebanon, Thujopsis borealis, Red and White Cedars, Irish Yews, Garrya elliptica, Araucaria imbricata, Kalmia latifolia, Pernettyas, and some named Rhododendrons, injured more slightly. The following are perfectly hardy and uninjured:—Andromeda floribunda, Cupressus Lawsoniana, Skimmia japonica, Berberis Bealii, Retinospora obtusa, Cedrus atlantica, Picea Nordmanniana, P. pinsapo, P. nobilis; Thuja tatarica, T. Lobbi, T. gigantea; Abies Menziesii, A. Douglasii, A. canadensis; Pinus cembra, P. Bungeana, P. austriaca; Spruce, common and black, English Yew, Silver-leaved Holly, common Holly, Rhododendron ponticum, R. hybridum, and most named varieties; Juniper, Savin, Box, and Mistletoe.

I have had no time as yet to look over my deciduous shrubs. My Roses were protected by a mulching of stable-litter, not yet removed, and though many, I see, will require well cutting-in, yet they are not nearly so severely injured as they were in 1860, when all my Hybrid Perpetual Roses were killed to the ground. On standards, short and tall, every bud was then killed. Of those which I grew on their own roots, about three-fourths threw up shoots and in time became fine plants, the remainder were completely killed. I have for the last twelve years grown my Roses principally upon their own roots as soon as I could get them so. When I receive plants, principally new varieties worked upon short stocks, I plant them almost horizontally, not allowing the roots to be covered above 4 inches deep, and pegging down the plants at the junction of the stock and the head, this part is covered 2 or 3 inches deep with soil. In this manner I succeed in having them upon their own roots, mostly during the first season. Since 1860 I have invariably treated my new plants in this manner, and I have now a good collection of five or six hundred plants on their own roots.

These notes on evergreens are worthy of the attention of any one about to plant, especially in Lancashire. Had I three or four years since possessed the knowledge I now have, it would have saved me some money and much of the vexation which I now feel in looking upon so much withered, brown, and blackened foliage in the borders.—S. B. S.

WHAT SHRUBS AND TREES ARE NOT INJURED BY GAME?

Would any of your contributors be good enough to give a list of the shrubs and trees, decidnous and evergreen, which neither rabbits nor hares meddle with, for the information of those who, like myself, contemplate planting where these animals are extensively preserved? Perhaps some one whose grounds are much overrun with game would state what trees and shrubs have escaped injury from these depredators. In the little experience which I have had in such matters, I have generally found that newly-planted trees or shrubs, even when distasteful, are sure to attract either hares or rabbits, or both, and to suffer accordingly, unless planted on a large scale; and where a plantation consists of one species only, even if that is the reverse of a favourite with these animals, where they have a choice, it is, nevertheless, sure to suffer where there is nothing else.—E. F. G.

NOTES AND GLEANINGS.

It will be gratifying to our readers to know that at a meeting of Council of the Royal Horticultural Society, held on Tuesday, Mr. Wilson Saunders was re-elected to a seat on the Council on the resignation of Earl Grosvenor, and also to the office of Vice-President. This is not only a graceful compliment to one who has served the Society so well, but it is to the interest of the Society to secure the services of such as Mr. Saunders, who can render such signal benefit to its prosperity.

—— Mr. Bause, the clever propagator of the Royal Horticultural Society, has performed the great propagation feat of raising plants of Chimonanthus grandiflorus from cuttings. This, we believe, has hitherto baffled the skill of all cultivators, and the late Dr. Lindley offered a sovereign to the then propagator of the Society for every plant that was so raised. The method adopted by Mr. Bause was to put in the cuttings of the young wood of the current year, just after it was "set" in July last, and furnished with leaves. The pot was placed on the surface of the bed of the cooler end of the propagating-pit, and there allowed to remain till the end of November or beginning of December. On examination, Mr. Bause, finding they had calloused but not rooted, repotted them, somewhat disheartened, and with little expectation of success. They were placed in the same position; and on Tuesday last, when he turned them out with the intention of throwing them away, to his astonishment he found the pot filled with a mass of strong branching roots.

—— The Rev. M. J. Berkeley, who has been investigating the characters of the trees known in nursery collections as Thuja gigantea and Thuja Lobbiana, has discovered that what is known by the former name is not Thuja gigantea but Libocedrus decurrens, and that Thuja Lobbiana is the true Thuja gigantea. These facts Mr. Berkeley has ascertained by an examination of Lobb's specimens in the herbarium at Kew.

WORK FOR THE WEEK.

KITCHEN GARDEN.

As soon as the state of the ground will permit sow Walcheren *Broccoli* or Cauliflower; in hot summers it forms large heads when Cauliflowers only produce "buttons." *Cabbage*, sow Early York and a few of the fine Dark Red, also the Yellow Savoy and some of the Large Green Savoy, to precede the principal sowing of next month. *Celery*, sow a little White and Red. Sow the seeds either in a pan or box, and place it in a hotbed. About the middle of March prepare a slight hotbed, upon which a one, two, or three-light frame is placed, so as to be in readiness for pricking out the plants, which will require to be done during the last week in March; the surface of the bed is to be covered with slates or large pieces of turf, grassy side undermost, and upon the slates or turf place a layer 3 inches thick of well-rotted dung from an old hotbed, which requires a good beating with the back of a spade, after which add a layer of good soil 1 inch in thickness, and the bed is then ready for the reception of the plants. *Kidney Beans*, sow Early Dwarf Dutch where it can be sheltered, and in pans in very gentle heat. *Lettuce*, sow Paris Cos; and a portion of those Lettuce plants in frames may be planted out if frosty nights are not likely to occur. *Onions*, if the Portugal or White Spanish be sown on a good warm border, and afterwards transplanted, the size will be greatly increased. *Peas*, sow; Cormack's Prince Albert, which is somewhat earlier than the Early Charlton, Knight's Dwarf Marrow, and the Auvergne are varieties of Peas proper to be sown at this time. *Spinach*, sow the Round, also *Radishes*, between the rows of Peas and Beans. Prick out *Cauliflower* plants. Plant *Potatoes*, *Horseradish*, *Jerusalem*

Artichokes, *Garlic*, and *Shallots*; the Long-keeping Shallot is the best. Sow *Basil* and *Sweet Marjoram* in pots in gentle heat.

FRUIT GARDEN.

Preparations ought to be made for protecting the blossom of Apricots. Thin canvas screens are, of course, the preferable means, but where this material cannot be afforded Spruce branches or Fern may be employed. Under a broad coping the blossoms of Peaches, Nectarines, and Apricots, are rarely injured, unless on an east aspect, where they are apt to suffer from exposure to cold cutting winds so prevalent from that quarter. Bring up all arrears forthwith. Make sure of thorough draining. Plant high both at bottom and top. Finish nailing, and provide against insects.

FLOWER GARDEN.

Attend well to thorough cleanliness; hoe through or otherwise dress all margins or beds where Crocuses, Anemones, Snowdrops, Primroses, and other spring flowers are peeping up. Plant out Hollyhocks directly. This noble flower is well deserving of general cultivation. Its bold and pointed form stands out in fine relief in masses of flat-headed shrubs. Walks may be turned, raked, and rolled down in order to prepare them for receiving a thin coat of gravel. It occasionally happens from disease and other causes that a Tulip does not make its appearance above ground with the rest; a careful examination should take place, removing the soil till you come to the top of the bulb, when it may be found that the outer sheath or leaf is wholly decayed or rotten. In this case, after removing the diseased parts, do not return the soil, but allow the bulb to have free exposure to the air, covering from rain or frost with a hand-glass. The weather is now favourable for planting the Ranunculus, which should be proceeded with as speedily as possible. Auriculas, if not previously top-dressed, should be attended to immediately. As seedling Polyanthuses come into bloom, remove all that are inferior in shape, lacing, and colour. Should any fine-formed flower with other good properties come pin-eyed, it would be worth while to fertilise it, as all its progeny will not necessarily be pin-eyed, and occasionally some very promising flowers spring from one of this description.

GREENHOUSE AND CONSERVATORY.

Dispense with fires in the conservatory as much as possible, a temperature of 55° by day, and 44° by night will be sufficient for general purposes. Do not allow the heat to increase much by sunshine. There is as much skill displayed in retarding certain flowers as in hastening their flowering in the first instance, and to this end a canvas screen of a thin character should always be at hand to throw on the roof during the middny hours of very bright days. The seed of the Chinese Primrose may be sown in pans filled with light soil, and as soon as the plants are sufficiently large let them be potted off into three-inch pots, which should be well drained and filled with about equal parts of loam, sandy peat, and well-rotted manure or vegetable mould. The plants should never be watered overhead, and great care must be taken that they are not overwatered at the root, or they soon become sickly and die. Be sure to sow a little Cineraria seed as soon as you can. This, with another good sowing of Chinese Primroses and Cinerarias in April, will furnish a supply throughout the next autumn and winter, if high cultivation be carried out. As we are now upon the eve of a general shifting season, place some loam and peat soil in an open shed. Leaf mould should always be kept dry. Have all the pots clean, and, in fact, see that everything is ready for coming operations. This is a good time to sow all kinds of exotic seeds, either home-saved or imported. Place them in heat and they will soon germinate; prick off into other pots as soon as the cotyledons expand, and you will have plants established in a very short time. Attend to your ornamental trellis plants, they should always be in high order, and to accomplish this frequent attention is necessary. Forced bulbs, as Hyacinths, Narcissus, &c., should, after blooming, have the leaves tied up, and should be transferred to a cold frame, and when the most severe weather has passed away they should be turned out of their pots to feed in prepared beds.

STOVE.

Continue repotting such Orchids as need that operation. Stanhopeas, Acroperas, Dendrobiums, &c., suspended in baskets or on blocks, will now either require syringing occasionally or watering by some means. Many of these will have received little water since the end of October, and will have become excessively dry. Blocks may occasionally be soaked for a few minutes overhead in tepid water; also, baskets if very dry. If syringing is resorted to, choose a bright sunny day for the purpose, and syringe them well early in the morning. On such occasions keep up a brisk fire, and give air freely until the afternoon for fear of the moisture lodging on the expanding buds, which in some cases would prove fatal. Some of the winter-flowering stove plants, as Geissomerias, Eranthemums, Plumbagos, and Justicias, now exhausted, should be cut back a little and left to break, when they may be disrooted and placed in smaller pots. They will make large and early specimens for next autumn, whilst cuttings from them struck immediately they break, will furnish succession plants of a smaller size for dressing front shelves. The temperature should now be allowed to rise freely on bright days in the early part of the afternoon, remembering that a rise by means of solar heat alone can do no harm for a few hours even at this period, provided it do not exceed 80°.

FORCING-PIT.

Continue to increase atmospheric heat and moisture at fitting periods. Attend to subjects for succession. Watch the worm in the bud of Moss Roses, fumigate for thrips, &c., and see that the plants are duly watered with tepid liquid manure.

PITS AND FRAMES.

Prepare a gentle hotbed to receive fresh-potted plants, and to nurse such as are required to be excited for affording cuttings. Sow tender annuals for early blooming. Give air and water, and repot plants that require it. Pot off all rooted Calceolarias that were put in in the autumn, to make room for more tender plants. Continue to put in cuttings of all kinds of plants that are wanted to decorate the flower garden.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Cabbages.—Earthed up some Coleworts planted late in autumn, and which, contrary to general results, have stood the winter well as yet, thanks to the snow, which kept the most severe frost from touching them. These will come in useful as our earliest cutting or gathering in spring, for our spring Cabbages will be a little later than usual. We have previously stated that in our plantation, though surrounded by a common net, there was not a single plant left, the rabbits, &c., making holes in the netting, or finding their way under it. To make amends, we turned out some hundreds of nice stubby Cabbage plants from pots which had been placed in the orchard-house and under glass frames, where the plants could have a little heat at the roots, and the tops be kept stubby and cool. In such positions they grew rapidly; and as the pots became filled with roots we turned the plants out on the 15th on a bank sloping to the south, being in expectation of the rain that followed on that evening and the next day. Such plants will grow right on without any check, and where no four-footed devourers of consequence will be able to attack them. These will now be little later than those planted out in September, but then, of course, the labour has been considerably increased—a matter of much importance when the market value comes to be closely looked at. Such schemes must be resorted to at times when we would not have crops later than usual. Many will make allowance for failures, accidents, and depredations, when the causes are seen to be beyond the manager's control, but will forget all about these causes when there is the slightest stint in the supply. This shows the necessity of constant watchfulness; and when an accident happens now and then from forgetfulness or inattention, the fine weather that succeeds seems to upbraid us every hour. It is bad enough when sowings and plantings are rendered next to nugatory through no remissness of our own, but from depredators that nothing but destroying them or guarding by wire netting can protect us from; but there is at least the freedom from self-accusation, the worst of all to endure. Even in such cases much labour is often required to bring up our leeway. Last season our early Cauliflowers, independently of trapping and poisoning, were so injured by rats, that, not to be behind, we had to hurry on a score or two under some old sashes in a pit. Singularly enough, we have not seen a Cauliflower plant touched as yet this winter. Last season nothing seemed to come amiss to the rats, and though many were trapped the numbers of the depredators were but little diminished.

Peas.—Sowed more in semicircular drain-tiles, but chiefly in pieces of turf 9 inches long, 4 inches wide, and from 2 to 3 inches in thickness, the turf reversed, a groove scooped out

in the centre, the Peas sown, and then covered with leaf mould. These were placed under some old frames, with just a little heat below them. We like tiles better than turf if we have enough of them. In filling them with rich earth we place a lump of rotten dung or leaves in each end. The Peas seem to grow more freely when transferred from such tiles, or even from boxes, than from turf, as, if the turf is firm, it seems to bind the young stems of the Peas too firmly, and so prevent their free expansion. Our ground is yet too wet to do much in this way out of doors, even if we could do so with safety. Last year about this time we thought we might sow with comparative safety, as we had not seen a pheasant about the garden for weeks, but before they were sown three days our winged enemies knew all about it; repeated sowings were just repeated feedings to them, and even tarring the ground would not keep them away; wire netting, or even common netting, would have baffled them, if small enough in the mesh—from ¾ to 1 inch, for if the openings were from 1½ to 2 inches there was every chance of many birds hanging themselves in the netting. The pheasant will cunningly shove his head through netting barely large enough to admit it, but he has little idea of extricating it.

In the last page of advertisements but one in the number for the 14th of February is a representation of *wire guards* in yard lengths at 1s. per yard, which would make a secure protection for Peas and other crops sown in rows, and which, besides answering many purposes of protection, would last a long time when taken care of. If this meet the eye of the advertiser, it would be well if he would state the width and height of the guard, the size of the small openings, and whether the wire is plain, japanned, or galvanised. These matters would be of importance to many, especially amateurs, who have been making inquiries on this subject, and to some of these we had recommended mere makeshift and cheaper plans, such as strips of wood placed on each side of the row, and a piece of fine netting fastened on the top. Two boards three-quarters of an inch thick, or even half an inch thick, with cross pieces to keep them together, 5 inches apart at the bottom, and three-quarters of an inch apart at the top, would keep Peas from the larger birds, but we question if such modes would be so economical in the end as these neat wire guards, with their iron feet to go into the ground, and at any rate they would not be so useful for general purposes, or for giving protection to rather tender plants when first turned out. When the Peas are 2 or 3 inches above the ground pheasants and other birds will trouble them but little. They are most ravenous at them just when the radicle is extended and the plumule peeping up, for then the seedlings are as sweet as young Peas. We should not mind sowing under cover the earliest crops, even with the ground so wet as it is now, and altering it to bring it into a nice, dry, friable condition before the plants are turned out, and then staking them as we go, for in that case the ground is left in such a healthy condition that the Peas generally thrive much better than those which have been longer in the ground. It is a serious matter, however, to do this with the general crops, as we did with most of them last season. Even the matter of watering them becomes serious, and there is a difficulty then in securing the usual luxuriance, and altogether the additional labour involved would soon equal in cost many yards of wire guards.

Treat garden Beans much in the same way as Peas.

Dwarf Kidney Beans must make room for a succeeding crop, the last just showing bloom, and the one before that bearing, and we have nice plants just ready to turn out. Now is the greatest strife of the season under glass—the great contest, resolving itself into whether such and such space shall be given to the useful or the ornamental.

Sowed more Celery on a slight hotbed covered with glass, and scattered over the bed a thin sowing of Cauliflower and Lettuces, which will be transplanted, or rather pricked out, before the Celery shows much.

Planted out strong plants of *Cucumbers* from six-inch pots, and singly, and used nothing but turfy loamy soil, well aired, with a little two-year-old cowdung. We examined the soil for fungus spawn, and rejected all in which there was a trace. On removing the soil lately from an old Cucumber-bed that did not quite please us, we found that there had been spawn in the little leaf mould used, and it had spread considerably in the soil. We have never found Cucumbers thrive well with such fungus matter in the soil. Wherever it is suspected a little quicklime should be added and frequently turned with it, but the whole should remain exposed until the lime has become quite mild. We have traced some of the ills that Cucumbers "are heir to" to the fungus matter in the soil, at least we think so, and only wish we could be more certain. We have advocated fermenting tree leaves for many purposes; but though it involves a little waste, it is safest to use them after they have been well heated, as the heat helps to send all crawling intruders to a distance, and to destroy the most of the fungus spawn. Even with that care we have found nasty spawn spreading through the leaves, and taking hold of and running thread-like through the soil; and then in some cases we have found the leaves of Cucumbers flag, fade, and rot, without any apparent cause; the stems would become soft and cankered, or split and gutter, and the smaller fibres would be soft and spongy, and rot with mildew. Instead of the old nostrums of many ingredients in a compost, we shall have to resort to simplicity more and more in soils, and many things besides. Though leaf mould is one of our most useful materials in a garden, we feel sure that if not decomposed and sweetened, and free from fungus, it often, especially in the last case, does great injury. For particular purposes, such as when used by the amateur for his favourite pot plants, it is a good plan to heat it well at a fireplace, or in or about an oven, and then place it in a dry, airy situation, and turn it frequently until it is thoroughly sweetened. All soils for in-door work will be much improved by this airing and sweetening.

All forced vegetables much the same as in former week's notices. Earthed down the fourth piece in the Mushroom-house. The first piece is still doing fairly, the second is in full bearing, from the third we shall not expect the Mushrooms to show for some weeks. The heat given off by these shallow succession-beds has been sufficient for the house, except when we had the severe frost, and we gave extra heat then chiefly because we wanted extra produce. We have often done this when we wanted a good supply for a certain time, though well knowing we should rather injure the continuous bearing of the bed. We were somewhat afraid we had thus put a sudden stop to the producing powers of the first bed; but after sweeping it all over, giving a little manure water, and a slight covering of hay, it has produced abundantly after a ten-days rest.

FRUIT GARDEN.

Besides pruning, nailing, &c., out of doors, and planting what should have been done in autumn, our chief work has been regulating and finding room for *Strawberry plants*. In our lean-to Peach-house, where the bloom is rejoicing in the snatches of sunshine, which house is about 11 feet wide, we have now four rows of Strawberries far apart from each other, and the shade of which will do little harm to the trees for some time. The highest suspended shelf has the pots set on turf reversed, and the grass from the edges of the turf has been twice clipped off, as otherwise from its hanging down it would give nearly as much shade as the pots. Besides, once or twice we have noticed this grass, from the extra stimulus to growth become very weak, and then it would be attacked by insects, and these would not stay on the grass. This does not often happen, but it is almost the only objection against using turf for this purpose, so far as its utility is concerned. Moss, too, is also very good, more especially if soaked some hours previously in hot lime water. Of course, we mean moss mostly fresh-collected, as, if it has been long stored up and dry, such precautions will not be needed. In its fresh-gathered state it is almost sure to have lots of slugs and snails, which though next to invisible to the eye, will soon show themselves when indulged with the higher temperature of hothouses or pits. Hence the propriety of soaking it in hot lime water. A little precaution often saves much trouble and expense.

ORNAMENTAL DEPARTMENT.

In addition to the general routine alluded to last week, the chief additional work has been inserting cuttings, potting Scarlet Pelargoniums in large pots for standing in verandahs in summer, giving them a little bottom heat after potting, and turning out and repotting a lot of *Caladiums*, placing them in small pots in the meantime, and where they will have a little bottom heat. We would have delayed this until the rhizomes had begun to push, but we wanted the room in which the large pots stood, and the pots, too, for other things. We have seen Caladiums do well where they were scarcely ever entirely at rest, such as when planted out on banks or rockeries, in plant-stoves. When grown in pots and allowed to go to rest as the leaves show signs of decay, two precautions are necessary for their safety: First, that the soil in which they are kept in the pots should neither be very wet nor yet dust dry, but in such a position as would be secured by the pots standing on a damp-

ish floor, and a little covering of moss over the pots, in which position the soil will remain in a kindly condition without any aid from the watering-pot, and the moss will also do much to maintain an equilibrium of moisture and of temperature; and, secondly, the temperature even with all this care should not be too low—it should seldom be below 55°, and should range between that and 60°. If kept dampish and in a lower temperature the rhizomes will be almost sure to become like a mass of soap. We have several times found them much shrivelled when kept hot and dry.—R. F.

COVENT GARDEN MARKET.—FEBRUARY 20.

THE Market remains steady, but there has been no improvement in the demand for any description of produce, consequently prices remain as last week, and we have no new feature to report. Arrivals of Potatoes are ample to meet the daily sales, both here and at the water side.

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... each	0	6 to	0	8	Leeks ..... bunch	0	6 to	0	0
Asparagus .... bundle	6	0	10	0	Lettuce ..... per doz.	2	0	3	0
Beans, Kidney, per 100	3	0	4	0	Mushrooms .... pottle	1	0	2	0
Scarlet Run, ½ sieve	0	0	0	0	Mustd. & Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions.... per bushel	4	0	5	0
Broccoli ..... bundle	2	0	3	0	Parsley.....per sieve	4	0	6	0
Brus. Sprouts ½ sieve	3	6	0	0	Parsnips ..... doz.	0	9	1	3
Cabbage ..... doz.	2	0	3	0	Peas..... per quart	0	0	0	0
Capsicums..... 100	0	0	0	0	Potatoes ..... bushel	4	0	6	0
Carrots..... bunch	0	6	0	8	Kidney ..... do.	5	0	6	0
Cauliflower ..... doz.	4	0	8	0	Radishes doz. bunches	1	0	1	6
Celery ..... bundle	2	0	3	0	Rhubarb ..... bundle	0	9	1	6
Cucumbers..... each	1	0	2	0	Savoys ..... doz.	3	0	4	0
pickling .... doz.	0	0	0	0	Sea-kale ..... basket	2	0	3	0
Endive..... doz.	2	0	0	0	Shallots ..... lb.	0	8	0	9
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	5	0	0	0
Garlic ..... lb.	0	8	1	0	Tomatoes.... per doz.	4	0	0	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	6	0	0
Horseradish .. bundle	4	0	6	0	Vegetable Marrows dz.	0	0	0	0

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples .....½ sieve	2	0 to	3	0	Melons..... each	2	0 to	4	0
Apricots ..... doz	0	0	0	0	Nectarines ..... doz.	0	0	0	0
Cherries ..... lb.	0	0	0	0	Oranges 100	5	0	10	0
Chestnuts ..... bush.	10	0	18	0	Peaches.....doz.	0	0	0	0
Currants..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	3	0	6	0
Black ..... do.	0	0	0	0	kitchen..... doz.	2	0	4	0
Figs ..... doz.	0	0	0	0	Pine Apples ..... lb.	4	0	8	0
Filberts.....lb.	0	0	0	0	Plums ..... ½ sieve	0	0	0	0
Cobs..... lb.	0	9	1	0	Quinces ..... doz.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Raspberries.....lb.	0	0	0	0
Grapes, Hothouse..lb.	6	0	10	0	Strawberries ..... lb.	0	0	0	0
Lemons 100	5	0	10	0	Walnuts..... bush.	10	0	20	0

TRADE CATALOGUES RECEIVED.

William Rollisson & Sons, Tooting, London.—*Catalogue of Floricultural and Culinary Seeds.*

Mrs. Dixon, 48A, Moorgate Street, London, E.C.—*Select List of Kitchen Garden, Farm, and Flower Seeds.*

Sutton & Sons, Reading.—*Sutton's Farm Seed List.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

POTATO ROSS'S EARLY (*G. A.*) — Messrs. Lawson, nurserymen, Edinburgh, could tell you where it is purchasable.

CAMELLIA GRAFTING (*Dickson*).—April is a good time for the operation.

TRANSFORMATION OF PLANTS (*W. L. C. G.*).—Such changes as petals into calices, and these into leaves, with many other such transformations, constitute what has been dignified with the name of morphology. The changes arise from various causes; but, why is not easily explained. Twenty-eight postage stamps will entitle you to a copy, free by post, of "The Horticultural Directory for 1867."

SUCCULENTS (*C. J.*). — We cannot recommend florists or any other tradesman. If one cannot supply you, you must write to some other.

DRIP FROM ROOF OF STOVE (*S. E. H*).—The house must be kept excessively moist for moisture to drip from the rafters. You may safely discontinue the syringing at this season, and, indeed, at any time syringing fine-foliaged plants is not good for them, as the water hanging from the points and edges of the leaves is apt to cause brownness and decay. The only defect we are able to point out in the construction of your house consists in the lights or ventilators not fitting well, and letting in the rain, and as water drips from several parts of the glazing, we conclude that part of the house has been badly constructed. Perhaps the putty was bad and the laps of the panes of glass insufficient. No internal moisture, unless it arise from excessive sprinkling and syringing, will injure or destroy the foliage of the plants further than may be prevented by the careful admission of air, and reducing the amount of moisture within the house. The roof should be seen to, and the ventilators made more secure against rain.

RIVER BANK PLANTING (*T. W. R.*).—We know of nothing that would serve you except Cornus sanguinea and the different kinds of Willows.

PIGEON MANURE (*Idem*).—Pigeon-dung is an excellent manure, and may be used with advantage to all vegetables. It is very stimulating, and may therefore be of greater value to such as are of quick growth. We have used it with advantage for early Potatoes.

MISTLETOE SEED SOWING (*A Young Gardener*).—Directions are given at page 93 of our present Volume—the Number published on January 31st. It grows most readily on the Apple, but it succeeds also on the Pear, Hawthorn, Hazel, Maple, Lime, Elm, and Willow. It rarely is established on the Oak.

GREEN TURF FOR CAMELLIAS.—*H. E.* would be obliged by Mr. Fleming stating how it is that the grass in the fresh-cut turf does not grow in the pots.

LIQUID MANURE IN A STOVE (*H. M. G.*).—The ammoniacal vapours arising from guano water applied to the stages (2 ozs. to the gallon) would not injure the foliage of Orchids.

PELARGONIUMS (*A. & M.*).—*Castlemilk* is a silver-edged variety, the white edging broad and softly clouding far into the green disk. This is very peculiar, and so is the form of the leaf, if the specimens we have seen were of their usual form, for they were perfect cups, the under side of the leaf being the inner side of the cup.

BOILER HEATED BY KITCHEN FIRE (*E. B. B.*).—The common boiler at the back of a kitchen range will suit your purpose. Of course the more it is exposed to the fire the better. If your boiler is open you are aware that your pipes should neither be above nor below the boiler. One-inch-and-a-half pipes will be quite sufficient to convey the water from the boiler to the four-inch pipes in the house to be heated, which is 18 feet from the boiler; but in that case these small pipes must be encased in sawdust, &c., or means must be taken to prevent their losing heat in that 18 feet, as the smaller the pipe the more would it be cooled if exposed. See answer to "F. F."

HEATING A PROPAGATING-HOUSE (*R. B. N.*).—As your fine has to go 10 feet before entering the house, we think the fine passing below the bed will bear the heat, though not knowing of what the piping is, we are not so sure of its doing so as if it were made of brick in the usual way. If you were to have a small trough for water for the pipes below your bed, and openings from that into the atmosphere of the house, to be regulated by plugs, then we think you might dispense with the culvert "A," which would be much in the way. The other arrangements seem correct, except that you should have openings from the chamber below the front platform to let heat into the atmosphere of the house as needed.

FORCING ROSES, LILACS, DEUTZIAS, &C. (*E. Newton*).— In the house heated by hot water you may have in bloom a great variety of plants by keeping it at a temperature of from 50° to 55° at night, with a rise of 10° in dull days, and of 5° or 10° more during clear days. The plants should be syringed in the morning and evening, and a moderate amount of ventilation must be afforded. If your house is devoted to greenhouse plants you will do well to confine yourself to them; and by growing plenty of Chrysanthemums, which will continue in flower from October until January, and Primulas, with Camellias, Epacrises, Correas, Cyclamens, Monochætum ensiferum, and Coronilla glauca, which will succeed the Chrysanthemums, it may be kept gay. Also have bulbs, such as Crocuses, Tulips, Hyacinths, and Narcissus; Lilies of the Valley, Dielytra spectabilis, Deutzia gracilis, Weigela rosea, Lilacs, Philadelphus, and Roses, which from their strength and ripeness of wood are calculated to bloom early in January, assigning them a light and airy situation. The above, with the other plants that will be in flower, will keep the house gay, especially when Azaleas come in. Pyrus japonica in a pot does well gently forced, and nothing is finer than Rhododendrons.

PROTECTIVE NETTING FOR PEACH TREES (*B. W. Stannus*).—The netting you enclosed is a good protection for the blossoms of your Peach trees, but should be doubled, or in readiness to be doubled, in case of severe frost. It should be kept at the distance of a foot from the wall by poles placed with one end under the coping of the wall, and the other in the ground at 1 foot 6 inches from the wall. The netting need not reach so far as the bottom of the poles by 1 foot. The poles may be 3 or 4 feet apart, and the netting secured to them at top under the coping, and at bottom fastened to the stakes or poles, which need not be more than 2 inches square.

VINE BORDER (*Idem*).—It is not usual to have the borders shallower in front than where planted; so to construct them is decidedly wrong.

CHARCOAL FOR VINE BORDER (*E. G. D.*).—The charcoal you propose using in the formation of a Vine border may be employed with advantage in pieces from the size of a hen's egg to that of a walnut, or even of a pea. It is, as you say, very useful to keep the border sweet. The lumps are better than the dust.

HYACINTHS DONE BLOOMING (*Inquirer*).—After blooming they should be hardened off or kept beyond the reach of frost in an airy light situation. When all danger of frost is past they may be planted in the open ground, covering the crowns of the bulbs with 2 to 3 inches of soil. Those grown in water are of little or no value after blooming, and those forced in pots are not worth forcing a second time.

IVY FOR FERNERY (*Idem*).—The smaller varieties of Ivy do well in glass ferneries; indeed most kinds answer, and are very pretty climbing over rockwork.

Pampas Grass Frosted (*Hanley*).—The Pampas Grass, killed to the ground by the late severe frosts, should not be cut down until the end of April or beginning of May, when the withered and dead foliage may be removed. The plant should have a mulching all round it, which may be neatly pointed in when the old foliage is cut away. Copious waterings with liquid manure are advantageous during dry hot weather.

Early-flowering Rhododendrons (*Beta, a Subscriber*).—The kinds which bloom at this early season are practically worthless, being in most seasons injured by frost to a greater or less extent; but they are good for conservatory culture, or where protection is afforded. We know of no means of retarding their flowering. Pinching off the flower-buds would prevent their flowering in the following year.

Annuals for Bedding (*Idem*).—Annuals would have a good effect and assist you to fill your beds—for instance, you may have Perilla nankinensis in the centre of a bed, your pale yellow Calceolaria round it, and Lobelia erinus speciosa as an edging. If your beds are narrow we should plant them in match beds or pairs, as follows:—In the two outside beds a line of Cineraria maritima in the centre, with a band of Tom Thumb Scarlet Pelargonium on each side, edged with Cerastium tomentosum; the next two beds from the opposite sides inwards, Heliotrope, edged with Saponaria calabrica; the next two yellow Calceolaria, edged with Perilla nankinensis, pegged down and pinched, or Lobelia speciosa; the next two Pelargonium Cerise Unique, edged with Cerastium tomentosum or Saponaria calabrica alba; and the two adjoining beds Tagetes signata pumila, edged with Oxalis tropæoloides (corniculata rubra). Some of these are perennials, but sown early they bloom or have effective foliage in the first year. All, with the exception of the Saponaria, which should be sown where it is to remain, require the treatment of half-hardy annuals. If you do not like the above arrangement, or have not plants of the Heliotropes, Pelargoniums, and Calceolarias, you may have as half-hardy annuals the following:—Stocks New Large-flowering Ten-Week, interspersed with the autumnal-flowering, which flower late, or either separately. The Dwarf German Ten-Week Stocks are good; one or two beds of Stocks are fine. The Victoria Aster will furnish materials for a pair of beds. Viola cornuta will have a good effect as an edging; it is a perennial. Also Amaranthus melancholicus ruber for its foliage, Calceolaria scabiosæfolia, Phlox Drummondi, Petunia; and of hardy annuals double Sanvitalia procumbens, double Jacobæa, Tropæolum Tom Thumb Scarlet, yellow and crimson Beauty, Coreopsis marmorata nana, and C. nigra speciosa nana.

Caladium Culture (*A Novice*).—The compost may consist of equal parts of turfy loam and peat, one-third leaf mould, and one-sixth silver sand, and one-sixth pieces of charcoal about the size of a hazel nut, all well incorporated. It is desirable to afford a temperature of 65° at night, and from 75° to 85° by day, with air. The watering should be very moderate at first, but when in full growth the plants require very copious supplies of water, and they luxuriate in liquid manure. The rhizomes should be buried about an inch.

Lapageria rosea Seed Sowing (*W. H. M.*).—Sow the seeds in pots or pans in a compost of turfy peat two-thirds and loam one-third, with a free admixture of sand. The pot should be well drained. The surface being levelled, sow the seed, and cover with its own thickness of fine soil. Place the pots in a hotbed of 70°, and keep the soil moist. When the young plants are large enough to handle, pot them off, and grow them on in the hotbed for a time, or until established, then harden them off, and place them in a warm greenhouse. For training a plant in a pan the best form of trellis is that of an umbrella, but nearly flat like a table.

Sweet Alyssum for an Edging (*Inquirer*).—If the seeds be sown in the second week of April in a flat-bottomed shallow drill the plant will make a pretty edging, lasting until late in autumn. Unless the soil is light it is one of the latest of flowering annuals. In heavy soils the seed should not be sown later than the second week of April. Sow moderately thickly, and when the plants are an inch in height thin them out to an inch or an inch and a half apart. For a line 50 yards long we should think 2 ozs. of seed sufficient.

Burnen Turf (*Calcaria*).—The turf that has been burnt if not reduced to ashes but only charred, will form one of the best of composts for Pelargoniums, Fuchsias, and Cinerarias, if used in the proportion of two-thirds to one-third leaf mould; but if the turf was hard burned, then the roots would not run well in it, and accordingly it should not form the staple of the compost. We may state that we have used the charred sods which had covered a heap of charcoal in the proportion of one-third of the compost, and it answered admirably. We should give it a trial.

Preventing Heat Radiating from Hot-water Pipes (*F. F.*).—How do you manage to have the heat in your hot-water pipes up to 216°? The whitening of the pipes exposed will arrest radiation. If done with quicklime it will stand for a considerable time; but we would prefer doing it with white or light-coloured paint. No colour, however, will prevent the radiation of the heat, though it will lessen it. In addition, wrapping the pipes in bands of wool or flannel will help you much; but even that will be much inferior to placing boxes of wood—say 5½ inches square inside measure round the pipes, and packing them lightly with sawdust. We have seen pipes exposed to the open air used for heating premises at the distance of 40 feet thus encased in wood, but without thick sawdust, and an opening left from the funnel into the house to be heated, and thus the heat given off by the connecting piping was carried along into the premises to be heated.

Queensland (*Old Colonist*).—We shall be very much obliged by your proffered communication. We always keep in mind the wants of our colonists, and publish anything connected with the culture of the soil that we think will be useful to them. If any colonist will write to us for information we will spare no efforts to obtain it for him. The sprig you enclosed is usually called the Cape Gooseberry, Physalis pubescens. The following is our note on Schizostylis coccinea (Crimson Schizostylis:—"*Nat. ord.*, Iridaceæ. *Linn.*, Triandria Monogynia. Native of watery places in British Caffraria. Flowers crimson, blooming late in autumn." A drawing of it is in the "Botanical Magazine" for 1864, t. 5422.

Primulas Diseased (*W.*).—They are indeed in a miserable plight. The roots must be nearly destroyed, either by vermin, or over-watering, or unsuitable soil. As we have no information on which to found an opinion we cannot suggest a remedy.

Name of Fruit (*Brassica*).—Your Apple No. 2 is Hoary Morning.

Names of Plants (*G. B.*).—Hardenbergia Comptoniana. (*Sophia*).—Polystichum angulare, not uncommon in the south and west of England. (*J. H. C.*).—1, Asplenium flaccidum; 2, A. umbrosum; 3, Adiantum tenerum; 4, A. hispidulum; 5, Acacia undulata; 6, Cypripedium insigne. (*G. M.*).—It is impossible to identify plants from sprigs of leaves. (*Dickson*).—Cephalotaxus Fortuni.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending February 19th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 13	30 324	30.164	52	43	47	44	W.	.00	Slight drizzle; hazy; densely overcast at night.
Thurs. 14	30 281	30.194	54	34	48	44	E.	.00	Foggy; hazy; very fine at night.
Fri. .. 15	29.998	29.710	58	45	47	44	S.E.	.10	Exceedingly fine; showery; cloudy, but fine, at night.
Sat. .. 16	29.774	29.719	59	40	49	46	S.W.	.38	Rain; fine; heavy rain at night.
Sun... 17	30.138	29.879	53	36	50	46	E.	.00	Foggy and mild; fine throughout.
Mon... 18	30.412	30.061	48	42	49	46	E.	.00	Dense fog; hazy; slight drizzle at night.
Tues. . 19	30.368	30.289	54	45	49	46	S.E.	.00	Hazy and damp; fine; overcast at night.
Mean	30.185	30.002	54.00	40.71	48.43	45.14	..	0.48	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

ROYAL AGRICULTURAL SOCIETY'S POULTRY SHOW.

We have great pleasure in calling the attention of our readers to the liberal prize list offered by the Royal Agricultural Society of England, at their meeting in July at Bury St. Edmunds. We trust it will be responded to by the amateurs of the United Kingdom. We know that if such be the case, the Show will be gladly continued by the Council; but if the poultry world be but badly represented, it cannot be expected that a Society such as this should be content with a small display. The list of prizes amounts to £206. They are chiefly offered to the breeds most kept by, or most likely to be profitable to, those engaged in agriculture. For the first time a separate class is offered for Houdans, and numerous prizes for Turkeys and Geese. We hope Norfolk, Suffolk, and Cambridgeshire will respond to the call, and that numerous entries will justify the amounts offered. The rules are assimilated as nearly as possible to those of any other show, and sales are recognised and encouraged.

The only objection that can be raised is, that the time of year is unfavourable; but we do not think it by any means great, much less insuperable. We do not look for the brilliant plumage of March in July, but we have never seen the time when we could not pick out good pens in condition to exhibit. Forward chickens are also fit to show; and although there are no separate classes for them, yet it is stated in the printed instructions, that wherever chickens are shown the Judges will be requested to take especial note of them, allowing for age. There are sufficient prizes for all ages to share in the awards, and the entries do not close till the 1st of June.

We cannot help thinking this is a step in the right direction, and we heartily wish it full success. None can shut their eyes to the importance of poultry in the present day. It ceases to be an article of mere luxury, and is part of the food of the country. Four hundred millions of eggs are imported every year; France, Belgium, and Holland are ransacked for food. It is true Rabbits do not enter into the category of farm produce, but it is not less a fact that they are imported into Eng-

land by the "ton," and are sold by the stone at a price that averages no more than that of mutton. They are sent over skinned, denuded of ears and feet; these are turned to account as fur and as manure, the latter used for growing the food on which they are fed. This has become a large trade. All the country from Calais to Abbeville is scoured for poultry—fowls, Pigeons, and Turkeys. This has existed for years, and a man who some time since commenced dealing on a small scale, died a short time ago a wealthy man, and at the period of his death was turning £200,000 per year. It may be the large farmer of England will not take to poultry again, but it is very sure that there are many who can, and will if their attention be drawn to it. Cherbourg is giving its name to Geese that come over by many thousands, and wherever the trade has penetrated the supply of the English market is the aim and end of poultry-keeping. The inhabitants of those parts can only speak of the cheap days of poultry as a thing of the past. It should be remembered that the poultry imported is not of the highest quality, and not that which supplies the tables of our aristocracy and the wealthy. It is consumed by the middle and even the working classes. The importance of poultry is becoming appreciated by Ireland, and it is not an unusual thing for several tons of it to arrive in one day at market.

Hitherto all attempts have been wrongly taken; breeding on a very large scale is a mistake, if by the term we mean keeping thousands of hens on a few acres; enough cannot be had to make it a profit, but many of the thousands paid to foreigners for eggs, Pigeons, Fowls, Geese, and Turkeys might be kept at home, and help to meet rent-day or to eke out a scanty income. The supply that comes from abroad is not the produce of a few large establishments, but it is the collected stock of many homesteads. The same is done in our poultry counties, Surrey, Sussex, and Kent. The higgler goes round and collects. In the neighbourhood of commons many Geese are bred, but thousands more may be bred, and there is a sale for them as soon as they are fit to move. Poultry, like everything else, has increased in price, and those who have had good Turkeys for sale have sold them well. Hundreds who have neither the time nor the convenience for breeding chickens and fattening them can keep egg-producing fowls that never sit. The Royal Agricultural Society has made three classes for the new French breeds that belong to layers only. We are sure it has conferred a boon on the country, on agriculturists, and all who keep or consume poultry, and we hope it will find so many entries to compete for its prizes, that it will meet the success and reward it deserves.

BREEDING GAME FOWLS.

(*Continued from page* 76.)

Some breeders assert that in crossing, colour and form, or shape, are derived chiefly from the cock, and that size, vigour, and constitution come from the hen. I would not, however, give much for any breed cock that did not impart all qualities to his progeny in excess of the hens. The best breeders for the cock-pit always considered the cock as the "fountain head" of all the qualities. The best breeders think so still, I believe.

Game fowls being very hardy will thrive in the smallest runs and spaces. I have seen them in small yards 10 or 12 feet square, and in rooms and cellars only 8 or 10 feet square, and yet healthy. These were the Brown Reds, Dark Greys, and white-legged, wheaten-coloured, Black-breasted Reds. A good country grass run would, of course, have suited them much better. Manufacturing workmen and artisans in the large towns often keep them in these small spaces. This shows them to be of stronger constitution than any other poultry, and less subject to diseases than any.

As to crossing and mixing the different colours, I think that Piles and Red Duns cross best of all the different colours, both being of a light red colour. Reds will always spoil the colour of Greys, giving them a tinge of red and brown, but Greys do not spoil the Reds. The best coloured Duckwings are bred from the Dark Grey cross, though this spoils Dark Greys. It is well known to all good breeders, that crossing colours is very injudicious as a rule, all the best breeders liking each sort to be exactly alike both in shape and feather and in blood, and disliking all mongrel mixed colours and crosses.

Slates I have noticed make a very bad roofing for poultry-houses, for they admit both heat and cold too much, heating very quickly in the sun. Wooden sides to poultry-houses are also bad, admitting cold too much. The best poultry-houses are built of brick with the roof always of good thick tiles.

No other poultry should be allowed to roost with Game fowls; and 7 feet is not too high for perches for them, though any higher would be bad.—Newmarket.

CROSS-BRED FOWLS—MANGOLD WURTZEL FOR POULTRY.

I have been much surprised to find the cross between a sitting and a non-sitting breed objected to. Now, I have kept fowls for years, and have tried different breeds, and from experience I can safely say that such a cross is the very best for those who want plenty of eggs, and not much sitting. The cross I prefer (if I can manage it), is one between Spanish and Cochin-China; the pullets, crossed again with Golden-spangled Hamburgh, produce the very best layers possible.

I have eight pullets from these crosses. During the severe weather I had plenty of eggs, although not quite so many as were laid before the frost set in. I have not a good run for the fowls; they are confined to a yard into which not a gleam of sunshine enters from the middle of October to the middle of February. The eggs are large and very rich; the hens large, hardy, and tame.

Have any of your correspondents ever tried globe mangolds for their fowls during the winter months? I have them boiled soft and chopped with their meal. In the summer the hens have chicken rice boiled and mixed with meal and bran. I always use bran, and although many disapprove of it, I believe it helps to keep my hens in the excellent health they enjoy. As my hens are entirely dependant on me for their food, I could not afford to give them meal alone. They have during the day two feeds of oats scattered amongst the grass with which I supply them.—J. L.

NORTHERN POULTRY CLUB SHOW.

(*From a Correspondent.*)

The first annual Exhibition of Poultry, Pigeons, and Canaries, under the auspices of the Northern Poultry Club, was held on the 7th and 8th inst. in the Mechanics' Hall, Aberdeen, and must have been most gratifying to the Association. Its first Show cannot be pronounced other than a remarkably successful one, both as to the number of the birds exhibited and their quality, there being 244 pens of poultry, 57 of Pigeons, and 82 of Canaries, in all 383 entries, and in quality far surpassing any previously shown at Aberdeen.

The *Spanish* classes, which came first, were very superior, there being scarcely a pen that could be called at all inferior. Mr. Gray's birds were especially fine, as also the second-prize cock belonging to Mr. Macaulay. Of *Dorkings* there was a very excellent show, especially the hens, which were almost without an exception remarkably good. The cock belonging to Mr. Anderson, of Ruthven House, Meigle, a splendid bird, obtained the cup for the best cock in the Show. *Cochins* were a good class, but I think the judgment in this and the next class—*Brahmas*, was faulty, the first prizes for cocks being awarded to large, coarse, and rough-feathered birds in preference to birds much more handsome, better-shaped, and more even in colour. The second-prize Cochin cock was really a very fine bird, and should have been first. In the class for Brahma cocks (nineteen entries), there was a better show than I have seen for a long time; but I think the Judges committed a great mistake in passing over Mr. Jopp's splendid bird, and giving the first prize to a heavy, coarse-looking bird, very flat in the breast. In pairs of hens Mr. Jopp was first with magnificent birds, both as to colour and size, and well feathered. The *Game* birds were a large and very excellent class. Among cocks, John H. Wilson, Esq., St. Bees, took the first prize with a splendid Black Red, as fine a specimen of this kind as there has ever been shown in Aberdeen. Mr. Anderson was first for pairs of hens with a magnificent pen, and second with one little inferior. Pencilled *Hamburghs* were an admirable class; but in Spangled Hamburghs the cocks, with the exception of the first-prize one, were rather inferior, this being in fact the only inferior class in the Exhibition. The hens in the same class were highly meritorious, the first-prize pen being as fine a one as I have ever seen shown. Amongst *Houdans*, &c., B. C. Urquhart, Esq., of Meldrum, was first and second with really magnificent pens. Some other very good birds had no chance of a prize from want of condition. *Bantams* were a very good class, Mr. Anderson carrying off the principal prizes with exceedingly fine birds. The Aylesbury *Ducks* were a splendid show (twelve entries), not a bad one being amongst them.

There was an excellent show of *Pigeons*, and if I mention the names of Mr. R. Fulton, of London, E. E. M. Royds, Esq., and Joshua Fielding, jun., Esq., Rochdale, and Mr. Grant, of Edinburgh, as being prize-winners, the quality of the birds exhibited may be judged.

Canaries were an excellent show, all from local exhibitors, a Buff

Belgian cock belonging to J. D. S. Bennett, Esq., being the finest specimen seen for a long time.

Amongst other attractions, one of Mr. F. Schroder's Patent Incubators was exhibited, and received high commendation from many connoisseurs, as being the most perfect apparatus for hatching they had yet seen. The arrangements for the Show were admirable, and admirably carried out under the superintendence of the President, Mr. Jopp, Vice-President, Dr. White, and the Secretaries, Messrs. Hendry and Gray. All the birds were dispatched to their owners by the first trains on the morning after the Show.

The following are the principal awards:—

Silver cup for the greatest number of Prizes, J. Anderson, Meigle.

Spanish.—First and Third, F. W. G. Gray, Aberdeen. Second, J. Macaulay, Exchequer Office, Edinburgh. Highly Commended, J. Kerr, New Scone, Perth. Commended, Mrs. Stronach, Sunnybank, Aberdeen. *Hens.*—First, P. Brow, Perth. Second, F. W. G. Gray. Third, R. Macgregor, Sunnybower, Perth. Highly Commended, J. Macaulay.

Dorking (Any colour).—*Cock.*—First and Cup for best Cock shown, J. Anderson. Second, Mrs. King. Third, J. Wilson, M.D., Oldmeldrum. Highly Commended, J. Rae, Woodside, Craibstone; R. M'Gregor. Commended, W. M'Ritchie, Glasluw, New Pitsligo. *Hens.*—First, J. Gordon, Manar. Second, A. Smith, Bellelvie. Third, J. Anderson. Very Highly Commended, J. Allan, Crieff. Highly Commended, J. Gordon.

Cochin-China (Any colour).—*Cock.*—First, F. W. G. Gray. Second, W. Hendry, Aberdeen. Third, G. Edward. Highly Commended, B. C. Urquhart, Meldrum. Commended, Mrs. Carnegie, Redhall. *Hens.*—First, Mrs. Oswald, Dunnikier, Fife. Second, Mrs. Carnegie. Third, F. W. G. Gray. Highly Commended, Mrs. Blair, Aberdeen. Commended, F. W. G. Gray.

Brahma Pootra (Any colour).—*Cock.*—First, F. W. G. Gray. Second, K. Jopp. Third, J. Anderson. Highly Commended, J. Chalmers, Westburn. Commended, Mrs. Carnegie. *Hens.*—First and Third, K. Jopp. Second, F. W. G. Gray. Highly Commended, Mrs. Blair; K. Jopp.

Game (Any colour).—*Cock.*—First, J. H. Wilson, St. Bees, Cumberland. Second, J. M'Gregor. Third, T. Wright, Perth. Highly Commended, J. Anderson; J. Barrow, jun., Bradley Field, Kendal. *Hens.*—First and Second, J. Anderson. Third, T. Ogilvie, Aberdeen. Highly Commended, W. Hendry, Aberdeen. Commended, T. Ogilvie.

Hamburgh (Pencilled).—*Cock.*—First, J. Hay, jun., Aberdeen. Second, R. M'Gregor. Third, J. Anderson, Marischal College. Commended, J. Ness, St. Clartown, Fifeshire. *Hens.*—First, R. M'Gregor. Second, T. J. Harrison, Singleton Park, Kendal. Third, J. Still, Spital.

Hamburgh (Spangled).—*Cock.*—First, W. France, jun., Crieff. Second, J. Robertson, Kintore. Third, A. Copland, Kintore. Highly Commended, Mrs. Brown, Abercairney, Creiff. *Hens.*—First, W. France, jun. Second, Mrs. Brown. Third, A. Copland. Highly Commended, J. Robertson, Kintore. Commended, J. F. Loversidge, Newark, Notts.

Polands (Any colour).—First, W. M'Intosh, Nigg. Second, J. Robertson. Third, G. Edward.

Houdan, La Flèche or Crève Cœur.—First and Second, B. C. Urquhart. Third, W. R. Park, Abbot's Meadow, Melrose.

Any other Variety.—Prize, W. M'Intosh.

Game Bantams.—*Cock.*—First, J. Anderson. Second, R. M'Gregor. Third, W. Mabon, Castlegate, Jedburgh. Commended, W. Bearpark, Ainderby Steeple, Northallerton.

Game Bantams.—First, J. Anderson. Second, J. Hay, Aberdeen. Third, R. M'Gregor. Highly Commended, W. H. Butcher, Preston; Master W. H. Pople, Perth.

Bantams (Any other variety) —First, J. D. Skene, Aberdeen. Second, Master W. H. Pople. Third, J. Clark, Fochabers.

Ducks (Aylesbury).—First, A. Haggart, Leslie, Fifeshire. Second, J. Allan. Third, Mrs. Carnegie. Highly Commended, A. Farquhar, Elsick, Stonehaven. Commended, J. Robertson, Kintore.

Ducks (Any other variety).—First and Third, J. Anderson. Second, A. Farquhar. Highly Commended, A. Farquhar.

Turkeys.—First and Second, Mrs. Carnegie. Third, B. C. Urquhart.

Geese.—First, G. Edward. Second and Third, W. M'Intosh.

PIGEONS.

Silver Medal for the best single Pigeon.—E. E. M. Royds, Greenhill, Rochdale.

Silver Medal for the best pair of Pigeons.—R. Fulton, Deptford, London.

Extra Silver Medal.—E. E. M. Royds, for First Prize pair of Jacobins, as the best pair in the Show.

Pouters.—First, J. Grant, Edinburgh. Second, R. Fulton.

Carriers.—First and Second, E. E. M. Royds.

Tumblers (Almond).—First, J. Baillie, Bellevue, Aberdeen. Second, Thomsen, Kendal.

Tumblers (Any other colour).—First, J. Baillie. Second, R. Fulton.

Fantails.—First, J. Grant, Edinburgh. Second, J. Rae, Guestrow, Aberdeen.

Jacobins.—First, E. E. M. Royds. Second, R. Fulton.

Turbits and Owls.—First, R. Thomson. Second, J. Grant.

Any other Variety.—First, R. Thomson. Second, J. Rae.

CANARIES.

A handsome subscription Silver medal for the best Belgian Canary.—J. D. S. Bennett, Aberdeen.

A Bronze medal, for the best Don Scotch, presented by Mr. M'Donald, Lodge Walk.—J. Ross, Gallowgate

A Subscription Bronze medal for the best bird of any other variety.—J. Hunter, Bellevue, Hardgate, Aberdeen.

1 Stone of Canary seed to the best Flecked Belgian, presented, by J. Roy, jun, Esq.,—J. Ross.

Belgian (Yellow).—*Cocks.*—Prize, A. Barnett. *Hens.*—Prize, J. Wishart.

Belgian (Buff).—*Cock.*—Prize, J. D. S. Bennet. *Hens.*—Prize, J. D. S. Bennet.

Belgian (Flecked).—*Cock.*—Prize, H. Mackie. *Hens.*—Prize, J. Ross.

Don Scotch Fancy.—*Cocks.*—Prize, J. Ross. *Hens.*—Prize, J. Ross.

Any other Variety.—*Cocks.*—Prize, Miss J. Allan. *Hens.*—Prize, Mrs. Browning.

Mules.—*Cocks*—Prize, J. Hunter.

Goldfinch or other British Bird.—*Cock.*—Prize, J. Wishart.

The Judges were—For *Poultry*, D. Brown, Esq., Perth, and Geo. Taylor, Esq., Inverness; for *Pigeons*, Mr. Brown and Mr. Cruickshank; and *Canaries*, Mr. Mitchell, of Perth.

NANTWICH POULTRY AND PIGEON SHOW.

The eighth annual Exhibition at Nantwich was held on the 8th and 9th inst., and a most excellent meeting it proved to be, particularly when the late period of the Show is taken into account, and the drawback to competition arising from the closely approaching breeding season. The Committee are a body of gentlemen of great self-denial, and unusually persevering, and in this alone, no doubt, resides the secret of their continued success. During the day merry peals were rung from the fine old church, vehicles of all kinds came laden with their fair occupants, and the attendance was exceedingly good. The Nantwich Town Hall is a most excellent place for a poultry show, and the arrangements for the comfort of the birds were really unexceptionable. A very uncommon but most useful feature was introduced into the catalogue—viz., a reference at the heading of the classes stating the part of the Exhibition-room devoted to each particular class. It saves much time, and really preserves much order among visitors, always anxious as speedily as possible to see particular favourites. This, we believe, was an original suggestion of the indefatigable Honorary Secretary, Mr. Edwin Rhodes.

Neither as to numbers nor quality were the *Spanish* fowls so good as on some former occasions; but the Grey *Dorkings* made most ample amends for this shortcoming. There were also some very capital White Dorkings, but in a general competition they rarely can succeed in taking prizes. The Aylesbury *Ducks* were remarkably good, but the Rouens were considerably below the generally accepted standard. In proof of the unusual excellence of the class for *Turkeys*, the first-prize pen took also the silver cup for the best pen of poultry exhibited. They weighed 40 lbs. the pair; and even a pen only so high in the scale as a high commendation turned the balance at 39 lbs., so great was the competition. The Buff *Cochins* were of unusual excellence. the Hon. Mrs. Sugden most liberally giving a silver cup for the best pen. In these classes not unfrequently a very light Silver Cinnamon hen was exhibited with a rich Buff cock. Such disparity of colour in the same pen is always inadmissible. The pair of Buff Cochin pullets, the cup-winners for Mr. Mapplebeck, of Birmingham, were far better than we usually meet with at any show. White Cochins were well shown. In the *Game* fowl classes, as usual at Nantwich, were to be found a long succession of rivals of the most extraordinary merit. We regretted, however, to find many adult birds entered as cockerels; and as to filing and glass-papering the spurs to make them appear like those of birds of the season, it might truly be said to be almost the order of the day. A few were thus treated very artistically; others were absolutely rasped off, until the core of the spur was entirely exposed; and one bird, at least two years old, had his spurs actually sawn clean off, as though for the cock-pit. Provision, we are told, will be made in future years against this disreputable attempt at imposition by the entire prohibition of the use of the file to the spurs of any cockerel, and very properly so. Brown Reds were, as usual in this district, the best variety of Game fowls shown; though in justice we must particularly allude to the first-prize pair of Game pullets—in one word, they were the best pair of Red Piles we have ever yet met with. Mr. Heath, of Nantwich, exhibited some extraordinary Silver-spangled *Polands*, a breed for which that gentleman's name has become famous.

The *Pigeons* were a very popular part of the Show, Carriers, Short-faced Tumblers, Fantails, Barbs, and Trumpeters constituting the cream of the collection.

This Show now seems fairly established, and it is most gratifying to record a favourable additional balance on the right side of the accounts from year to year. May this prosperity continue.

[We published the prize list last week.]

NEW PUBLICATION.

A Few Observations on the Breeding of Trumpeter Pigeons. By Thomas Rule. Durham: J. H. Veitch. Pp. 4.

An increasing minority of our readers are ladies and gentlemen who take delight in fancy Pigeons. Residents both in town and country have become gradually awake to the beauty, highly ornamental character, and very interesting nature of these birds; probably the better engravings which we see now-a-days of fancy Pigeons have something to do with this change in their favour, for had the poor birds been as ugly as the pictures in the old Pigeon books, and even in some modern ones, nobody would have cared to keep them; but the pencil of a Harrison Weir has at length done the fancy Pigeon full justice. At many a villa fowls cannot be kept; but Pigeons, never annoying a neighbour or injuring a garden, can always have a home, and a collection of true-bred birds, either hover-

ing in the air, sunning themselves on the house, or promenading the bright, clean gravel, is attractive even to those who do not understand them, for the eye is pleased by their variety of form and feather; while to the fancier the pairing the adult birds, the watching for beauties in the young, and marking the various properties in all, form unceasing sources of interest and amusement. As yet there have been few Pigeon writers, and the most accurate, Mr. Brent, must, alas! be spoken of as the late; but I do not doubt there will be plenty of writers on this subject now that many well-educated people have become Pigeon-fanciers.

I have been led to make these observations from the nature of the subject rather than from the bulk of the publication at the head of this paper, which contains but four pages, one of them being the title-page; but a writer who speaks in the following modest manner disarms criticism. "I have given," says Mr. Rule, "all the information I can on the present subject, and hope it will not be taken in a wrong light, for it is not with any arrogant feeling or presumptuous thoughts that I have dared to give these few expressions, but merely to give to the less-experienced what I have learnt by a few years of close and attentive observation." I will not say more critically than that the pamphlet is not very well expressed, and the price, marked in ink on the copy before me—viz., *2s. 6d.*, must surely be a mistake.

In regard to Trumpeter Pigeons, I had recently an opportunity of seeing some birds, brought from Egypt by a gentleman long resident there, and called by him Egyptian Pigeons; but they were to all intents and purposes White Trumpeters, though not quite equal to our best fancy birds. This fact confirms the late Mr. Brent's observation, that "Trumpeters are of Egyptian origin." It is a good plan, especially for those fanciers who have not much space, to devote themselves to one variety, and try to bring it to perfection, or at least to test its capabilities of improvement. Probably Mr. Rule has done this with the Trumpeter: hence his pamphlet. In the estimation of some fanciers the Trumpeter holds a high place. I have known, both formerly and in recent years, gentlemen who were life-long Trumpeter-fanciers, so that there must be much in the breed to repay such regard, pains, and attention. Indeed, the Trumpeter, if well-bred and kept clean in feather and feet (he is the very bird for the country), is a noble-looking fellow. His size and feather helmet, moustache, and jack boots mark him out as a cavalier. He has something to say also for antiquity of race, as he is mentioned by our oldest writers, and always ranked by them among the better Toys.

Mr. Rule has studied his birds well, and what he says in regard to breeding Mottles, which are perhaps the handsomest, appears likely to be correct. In his chapter "On Laying" the cure for apparently barren hens, which has been known at any rate since the days of Windus (1802), and has been copied by Eaton, Mr. Rule appears to have found correct. The non-advisability of allowing Trumpeters the free use of the bath is a good hint, and the "Notes on Food and Nesting" are worth remembering.

In conclusion, I would observe that if fanciers of special varieties of Pigeons would year by year note their failures and success in their pocket-books, and send their notes to this Journal, they would secure a greater number of readers than any one publishing a small pamphlet, and they would also serve better the cause of the fancy generally. Some varieties may yet be improved, the best fanciers may yet have something to learn, the beginner much. It seems pretty evident that we shall soon have a Pigeon show attached to every poultry show, and no birds are better suited to be ladies' pets than fancy Pigeons. I will not say more of Mr. Rule's pamphlet as I am not a Trumpeter!—Wiltshire Rector.

WELSH RABBITS.

In your notice of my "Instantaneous Reference Guide for Poultry, Pigeons, and Rabbits," you appear to doubt the existence of a breed of Rabbits stated in the Guide as Welsh. I beg to inform you and others in doubt that those Rabbits known as Welsh in my neighbourhood have long black coats, dark eyes, and are of much the same shape and size as the common tame Rabbit. It is certain they are a distinct breed, although some persons might think them Angoras from having long coats; but this is an error, for Angoras to be pure must be perfectly white, and have shorter ears. I do not consider them handsome, although they prove an agreeable contrast to the Angora, which is the prettiest of Rabbits.—David P. Gooding.

FOUL BROOD.

While making these remarks I have no desire to re-kindle the ashes of the once celebrated foul-brood controversy, but solely to contribute to the stock of general information, with the view of assisting such of your correspondents as the estimable "R. S.," who, instead of carping, methodically applies himself to the task of endeavouring to discover the cause and cure of a malady at once the most mysterious and destructive which can affect the well-being of our interesting little favourites—and his efforts in this direction are beyond all praise.

First of all I may relate a curious circumstance connected with this subject.

It is now some time since I chanced to receive a visit from a stranger bee-keeper, from a considerable distance, who had come, on the recommendation of a mutual friend, to inspect my apiary and have a second look at those "new foreign bees," as he styled the Italians. His wishes in this respect having been duly gratified, we adjourned to the house; and my new friend, although a plain man, I found shrewd and thoroughly intelligent, quite an enthusiast in bee-keeping, as his father had been before him, and, I subsequently learned, no mean authority in his own district, from his sound judgment and integrity, being by common consent the favourite judge at all honey shows far and near. On the first favourable opening of the somewhat lengthened but most interesting discussion which followed, I asked if ever he had met with foul brood. "Oh, yes, often enough," if it was "back gaun brood" I meant; and then, having been fairly started on the subject, there followed a long list of illustrations, brought to a stand I imagined by my putting the rather pertinent question, What was its cause? Oh, for the graphic pen of our worthy chaplain, "Wiltshire Rector," to depict, in solemn conclave met, the numerous band of correspondents and readers of the bee corner of "our Journal" to discuss the origin of this dire malady! the derisive shout that must have arisen from your talented contributor Mr. Lowe and his disciples the chillists, on hearing his ready reply, that instead of their pet theory of experimenting with subsequent chill, it altogether arose from "jist overheating!" How came he to this conclusion? was followed by an array of instances, terminating with, "Take the first time I saw these foreign bees of yours," and he proceeded to relate how he, along with a few friends and neighbours of a gentleman in his part of the country, had been invited to witness a first flight of Italians just arrived—not any small artificial swarm from the experimental apiary of our good friend "A Devonshire Bee-keeper," in some abominable compound bar-and-frame hive, but, on the contrary, direct from their native mountains, a teeming population in an orthodox common straw skep. The bees having been liberated, and the first few emerging and taking wing having been duly admired, the company proceeded to the house to share their host's hospitality, but my informant (I have not a doubt the most interested of the group), speedily stole back to the garden to feast his eyes on the glittering foreigners, and threw quite a gloom over the company by returning in a short time, and telling their owner his new bees would do him no good from "back gaun brood," as they were fairly overheated, streaming in masses over the board. And had his prophecy been verified? I asked—he was certain it would, but had never been there since.

It so happened last spring that I received a communication from a most experienced apiarian, and amongst the incidents of his apiary he narrated the loss of a very precious Italian queen, and to replace which he had taken a trip to try and purchase the queen of an imported colony badly infected with foul brood, but had arrived too late, as on examination he found that the queen as well as her entire subjects were numbered with the dead. Could it be possible? I at once wrote to my friend, and found that by one of those strange coincidences we sometimes meet with, this was the identical colony whose "welcome home" the honey judge had attended.

I was accidentally enabled to test the point for myself last summer as follows:—To prevent a swarm from a very populous and most healthy Italian colony, I transferred a few frames along with the queen to an empty hive, and dispatched it to the outlying apiary more than a mile away; and so rapidly had the population increased, that my man on carrying it home some weeks afterwards, thinking it unnecessary to take a

cheese-cloth with him, merely satisfied himself by wedging it up, but discovered his mistake on arrival, for he found the honey streaming over the board, and on raising the hive a pitiful sight presented itself, several hundreds of bees being suffocated and drowned on the board. A clean one was at once substituted, and with some anxiety I searched for and was pleased to find the queen uninjured, and while so employed did not fail to observe the immense masses of maturing brood and its perfectly healthy condition, not even one suspicious cell to be seen. This was most satisfactory, and I closed the hive, thinking a few days would repair the loss of bees, which could well be spared, and that it would soon be necessary to super and nadir to save swarming. Such were my cogitations, when there arose to my mind the stalwart form of my prophetic friend, pronouncing this clearly a case of overheating. The colony remained undisturbed for several weeks, without requiring additional room, and it was with fear and trembling I proceeded to examine it; but how woefully was the picture which previously presented itself now reversed! Here were perforated cell-covers in abundance, with the too familiar slimy decaying embryos—in short, unmistakably foul-brooded.

A subsequent examination towards the end of the season showed a manifest improvement in the stock, both as regards population and the clearing out of foul cells, a proceeding I never before witnessed, save in a straw square frame hive the preceding season, as recorded in No. 238, and I have now no doubt that that outbreak, like the above, originated solely from overheating. Some few foul cells still remaining, I thought it prudent to put the bees through the purgatorial process, and joined them to an adjoining stock, as I had done at the end of the preceding season those of the square straw hive above alluded to; only in that case, the population being still larger, I gave them the entire works of a vacated black colony, and they prospered exceedingly, throwing two fine swarms last summer, besides at its close outweighing any swarming stock I possessed. The other colony referred to in the above Number of the Journal was a particularly strong one, in a set of Stewarton boxes, the only one bred of an infected Devon stock which had escaped contamination, and although the population was enormous, and yielded me five beautiful octagon supers, the disease had made such rapid progress by the spring that I appropriated its contents, and saved the population in a clean hive, which subsequently prospered.

My experience forces on me the conviction that overheating rather than any amount of experimenting and chill, induces this most mysterious malady, and as confirmatory of this conviction, I quite agree with what your correspondent, "A Lanarkshire Bee-keeper," says as to its showing itself so much more readily in warm weather; still there is no doubt it can be communicated by infection at any time, in which case it assumes a much more virulent type. As to the harmlessness of chill, I had a good illustration in a large mahogany unicomb observatory hive, stocked late last season with the frames and population of a strong Italian hive. Cold nights soon setting in, the bees drew up off the brood, abandoning frame after frame, receding yet upwards till I removed them back to their original hive in the beginning of winter, making then a thorough scrutiny; and while there was plenty of chilled brood, I did not observe one foul cell.

A leading Ayrshire bee-keeper, long a severe sufferer from foul brood, wrote me lately, that by thoroughly ventilating his entire stock during the last summer, as recommended by the Rev. L. L. Langstroth for winter practice, he has seen less of his old enemy than for many a day.

The recent introduction of frame hives, instead of originating has rather been the means of calling attention to this disease, which exists in cottagers' hives kept exclusively on the swarming system, to an extent little imagined. My assistant was stung into the belief that the irascible Italians and their artificial propagation were the sole cause of this fell blight on our previously flourishing apiary, but had his faith thoroughly shaken on receiving leave of absence to visit his father, to whom, doubtless, he recounted many feats of apiarian valour. The old cottager agreed to submit a large stock to the driving process, otherwise doomed to the brimstone-pit. It had thrown two good swarms during the summer and had never been raised once from the board since it was set down a swarm, and yet on his return he told me this stock contained a mass of foul brood as compared to which our worst cases were but trifling.

Last autumn I had an opportunity of inspecting an apiary, with one exception the largest I had seen, kept altogether in common swarming hives, and while awaiting the coming of the party in charge, was not a little tickled at the mode of feeding, which fairly outrivalled the "*Times* Bee-master's" plan. On the landing-boards of about a score of hives were placed pieces of broken combs for the bees to clean out, and in every instance were present evidences of the certain existence of foul brood, doubtless weak stocks that had been broken up and their contents thus disposed of. The feeder on his arrival was in happy ignorance of either "foul" or "back-gaun brood." Not so, however, must have been their old master, then on his death-bed, otherwise his stock could not have multiplied to such an extent.—A Renfrewshire Bee-keeper.

OUR LETTER BOX.

Eggs Ill-flavoured (*Mitcham*).—The disagreeable flavour arises probably from some plant the fowls eat in your garden. If the "market sweepings" contain much of peas and beans, these and the buckwheat together would be very liable to impart a rank flavour to the eggs. Do not omit the calcined oyster-shells.

Golden-spangled Hamburgh Cockerels Dying (*T. H. R.*).—We have no doubt you may attribute the loss of your Hamburghs to the snow. We can only answer your question by another: How is it that in fine weather, and with everything in their favour, the deaths among Crève Cœurs and La Flèches are seven cocks to a hen? There are certain things more fatal to cocks than hens. In your case the birds wanted the best stimulant you could give. Ale, wine, or brandy and water would have saved them. Their combs were frosted, and would have perished away.

Fowls for Damp Yard (*Lady Barn*).—Brahma Pootra, Cochin, and Houdan are all adapted for you. When you have young chickens feed them well on bread steeped in ale; let them have ale to drink, and if that is not enough, let them have camphor enough in their water to make it into camphor julep. By adopting this plan you will rear your chickens; but remember that either naturally or artificially they must have dust to bask and bathe in.

Brahma Pootras (*J. R. B.*).—Our experience does not agree with yours We do not find Brahmas eat according to their bulk. It is easy to test their consumption if you have them in confinement. Weigh or measure all the food they consume, see what it amounts to in bulk and money. We know only three breeds that bear confinement as well as Brahmas —Cochin-Chinas, Spanish, and Houdans.

Sick Fowls (*Cottager's Wife*).—Your fowls have access to something that disagrees with them. If they are in confinement, give them their liberty. If they are not, clean out all their places thoroughly, remove the sickly birds, and feed only on bread or ground oats steeped in strong beer. Let them have little water only three times per day, and none by them. Feed in very small quantities five times per day, and let them have fresh mould and gravel.

Lame Ducks (*M. C. A.*).—Keep your Ducks away from all water till they are cured. Give them oats in a shallow vessel. Cover the bottom of it with a sod of grass, and put water enough to cover it all.

Eggs of Dorking Pullet (*J. C. B.*).—The first eggs are as likely to be fertile as those later laid.

Flooring for Poultry-House (*A. O., Finchley*).—The following extract from "The Poultry Book," which you can have free by post from our office for 7*s.* 10*d.*, will meet your case:—"Bricks or pavements of any kind we regard as the worst of all materials for the floor; they retain moisture, whether atmospheric or arising from insufficient drainage; and thus the temperature is kept low when warmth is most essential, and disease too often follows, especially rheumatic attacks of the feet and legs. The flooring of a poultry-house should be of dry gravel, and quite loose to the depth of 2 or 3 inches—nothing can then adhere to it; and it is neither necessary nor right to sweep the floor of a poultry-house. A long birch or heath broom may be drawn lightly over the surface. It will remove everything that offends, but if turned over with a spade twice or thrice weekly, the earth deodorises the dung and becomes a good fertiliser in the course of a few months, and has then to be removed and replaced by fresh earth. A mixture of gravel and coal ashes makes an excellent flooring, and in which the fowls delight to busk."

Canary with Inflamed Skin (*J. Bisset*).—Are you sure there are no insects on the bird? If there are, dust him with flowers of sulphur thoroughly down to the roots of the feathers. Give a little maw seed once a-day, and let him have a bath daily.

Dimensions of Entrance and Box for Fantail Pigeons (*J. G.*).—If the question refers to a box nailed outside a wall, the entrance must be no larger than ordinary, or the rain would enter. As to the inside, it should be 14 inches square, as the pair would probably sleep in it, as well as have their nest in it. If, as is more probable, the question refers to nesting-places inside a loft, we have them 10 inches square for Tumblers, but some specially made for Fantails a foot square, quite open in front, except a bar about 3 inches high, in order to keep the nest in. By this size and arrangement the tails of the birds are uninjured. For a separate box in a loft a tea-chest does well enough, having a square nest made in one corner by two bricks meeting the back and side of the box. If there be a close front the door should be wide enough to admit of ingress and egress without crushing the fine expanded tail.

Boxes for Hives (*Q.*).—Our reply to "B." in last week's Journal should have been qualified by the statement that the "boxes" referred to were circular in form. Square boxes of 16 inches diameter would in our opinion be too large for bee hives.

Feeding Bees in Spring (*W. D. A.*).—We have already commenced feeding such of our stocks as require it, selecting mild days for the purpose Honey rendered fluid by being warmed and diluted with a little water is perhaps the best food; but we find simple syrup made of lump sugar, in the proportions of three parts sugar to two of water, by weight, answer every purpose.

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 28—MARCH 6, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
28	Th	Meeting of Zoological Society, 8.30	49.3	33.4	41.3	15	51 af 6	35 af 5	58 2	54 af 11	24	12 48	59
1	F	[P.M.	47.8	33.8	40.8	15	48 6	37 5	45 3	44 0	25	12 37	60
2	S	Royal Hort. Soc., Promenade, 3 P.M.	49.0	35.2	42.1	16	46 6	39 5	27 4	41 1	26	12 25	61
3	Sun	Shrove Sunday. [7 P.M.	50.0	32.1	41.0	12	44 6	41 5	4 5	42 2	27	12 12	62
4	M	Meeting of Entomological Society,	49.8	31.1	40.5	11	42 6	42 5	37 5	47 3	28	12 0	63
5	Tu	Royal Horticultural Society's Meet-	48.9	31.8	40.3	16	40 6	44 5	8 6	55 4	29	11 46	64
6	W	Lent begins. Ash Wed. [ings.	48.8	32.7	40.7	17	37 6	46 5	37 6	7 6	●	11 32	65

From observations taken near London during the last forty years, the average day temperature of the week is 49.1°; and its night temperature 32.9°. The greatest heat was 70°, on the 4th, 1860; and the lowest cold 14°, on the 3rd, 1862. The greatest fall of rain was 0.81 inch.

CULTURE OF ROSES IN POTS IN GREENHOUSES.

THE best Roses for greenhouse culture are the finer varieties of the China and Tea-scented, the latter, especially, on account of their peculiar and delightful fragrance; but the Bourbons and Hybrid Perpetuals must be included. The following varieties I have found good:—

China.—Madame Bréon, Mrs. Bosanquet, Triomphe de Gand, Prince Charles, Henri Cinq, La Séduisante, Infidélités de Lisette, Louis Philippe, Napoleon, Clara Sylvain (generally classed with the Tea-scented), and Fabvier.

Tea-scented.—Goubault, Homère, Devoniensis, Abricoté, Buret, Adam, Barillet-Deschamps, Comte de Paris, Elise Sauvage, Caroline, Le Caméléon, Lays, Madame Bravy, Madame Maurin, Madame J. Halphen, Safrano, Victoire, Souvenir d'un Ami, Niphetos, Madame William, Maréchal Niel, and the finest scented of all Teas, the original of this family, Rosa indica odorata.

Bourbons.—Souvenir de Malmaison, Baron Gonella, Acidalie, Queen of the Bourbons, Emotion, Marquis de Balbiano, Reveil, Vorace, Sonchet, Rev. H. Dombrain, Louise Margottin, and Catherine Guillot.

The *Hybrid Perpetuals*, not to be overlooked, are Lord Macaulay, Lord Clyde, John Hopper, Lord Palmerston, Duc de Cazes, Duc de Rohan, François Lacharme, Gloire de Santenay, Charles Lefebvre, Caroline de Sansal, Madame Furtado, Duchesse de Morny, Madame Alfred de Rougemont, Madame Boutin, Louise Magnan, Louis XIV., Senateur Vaisse, Pierre Notting, Monte Christo, Virginale, William Griffiths, Comte de Nanteuil, Maréchal Vaillant, Madame Vidot, Baronne Pelletan de Kinkelin, Alfred de Rougemont, and Prince Léon.

All the above are good Roses, and, for greenhouse culture, should be on their own roots. Most, if not all, of the kinds named are kept in stock by our principal nurserymen in 24's or six-inch pots, of a size fit for this mode of culture, the cultivator being thereby saved a year in the preparation of the plants. Those, however, who wish to prepare their own plants should procure them in spring, not later than May, and if in small pots, as they usually are, they may be at once placed in pots 6 inches in diameter, in a compost of loam and leaf mould in equal parts, with a free admixture of sharp sand amounting to about one-sixth of the whole. The pots should be drained to one-third their depth with crocks, and in potting the ball should be gently pressed to loosen it, which is desirable.

After potting, the plants should have a good watering, and be set on slates or a hard bottom in an open, warm, sunny situation. The intervals between the pots should be filled with ashes; in other words, the pots should be plunged to the rim. The plants should be frequently syringed, especially in the evenings of hot days, and well watered at the root, taking care not to saturate the soil or make it sour through repeated waterings when it is already wet, and dryness must be equally guarded against, extremes of either being injurious. All flower-buds as they show are to be pinched off between the nails of the finger and thumb, and any strong shoot stopped at the eighth leaf. The pots should be occasionally lifted to see that the roots are not coming through, and if they are rub them off before they make any great progress.

Towards November the pots should be lifted and plunged in coal ashes in a cold pit or frame; the watering, being discontinued after September, is not to be renewed on the removal of the plants to the pit, but they are to be kept dry, and to have air whenever the external atmosphere is mild, also protection from rain and frost. Where the frame or pit accommodation is limited the Perpetuals and Bourbons may remain out of doors in a sheltered sunny situation, affording them the protection of a mat or other covering during very severe frost. Tea-scented and China Roses, however, must either have the protection of a frame or be placed at once in the greenhouse, which is anything but desirable, as the space which they there fill can be much better occupied with Chrysanthemums and other plants. Should there be a light and airy cool house it would be well to place them all in it, and if the weather prove severe a little hay should be packed round the pots, and may be spread over the shoots, taking care to remove it after the severe weather.

Early in February the plants may be taken into the greenhouse, the pots having been previously washed clean, and the drainage made good if defective, as no plant will thrive in a badly-drained soil. The surface of the soil in the pots should also be stirred, and if green, replaced with fresh. The plants may then be pruned. The pruning of the China and Tea-scented kinds should consist in moderately cutting out the very weak shoots, and doing little more than shortening those of moderate growth, so as to form a compact bush. The Bourbons and Perpetuals should be cut in—the very strong shoots to four, the strong to three, and the moderately strong to two eyes, and the weak cut clean out, unless a shoot be wanted in a particular place, when a weak shoot may be cut back to one eye. If tall plants are wanted, any of the Tea-scented or China varieties that have made good growths may have a neat stick or stake placed in the centre of the pot, and the strongest of the shoots tied to it, the others being shortened to different heights, that tied to the stake to have merely its end taken off. The plants must be placed as near the glass as their growth allows, and between it and them no creepers or other plants must be tolerated. They cannot have too much light, it is easy to shade them when in bloom, and the position should be airy. The temperature need not be altered to suit them, as that of a greenhouse is admirably adapted to their requirements. Due regard must be paid to watering them, avoiding extremes either way, and yet it is as well to let the soil become rather dry, and then afford a

good supply, and not dribblets, which, if the soil is dry, do not reach the bottom of the pot, or, if it is wet, only serve to saturate it the more. At first moderate supplies of water will suffice, but when the foliage has become developed it will be required in abundance. Syringing should be practised morning and evening, except in cold and dull weather, when once a-day, and in the morning, will suffice, and it should be continued until the flower-buds show colour.

After blooming, which will be in June, the plants should be removed from the greenhouse, and must be carried to the potting-bench, and repotted forthwith. If the cultivator does not wish for large plants he will merely cut back the roots a little, so that the pot will hold a little fresh soil, the old pot being clean-washed and again used. Varieties of compact growth will, of course, be selected for this purpose—small plants that do not take up much room, and the best are the small-growing Tea and China Roses. The others may have pots 9 inches in diameter, which are large enough, and not too large for holding sufficient soil for a good and yet not ungainly specimen. The pots should be well drained by placing a good-sized crock over the hole, and about half a dozen of less size above it; then one-third fill the pot (including the space occupied by the crocks at bottom), with pieces of charcoal the size of a Hazel nut, the small dust being sifted out, which may be mixed with the soil, and turf cut thin and chopped into pieces from half an inch to an inch square. A drainage of this kind seldom clogs, and supplies food to the roots.

The soil I would advise for this and all the subsequent shifts of Roses in pots for the greenhouse, is turf from a pasture closely cropped by sheep, the soil of which is neither too heavy nor too light, but a good hazel loam; whilst for the Tea-scented and China varieties I would give the preference to the turf from a moor or common overlying a sandstone, which when burnt furnishes that which is known as silver sand. I do not mean a peat or bog turf, but one that is neither peat nor loam, and yet both, full of fine particles of white sand. The turf should not be cut of greater thickness than 1½ inch, and if it cannot be exposed grass side downwards to a temperature of 210° in an oven or on a hot iron plate for an hour, so as to destroy all insects, and kill the perennial-rooted weeds, I would use it fresh, chopping it in pieces half an inch square, and making it pretty firm. The old soil in potting should be removed, or at all events the ball gently pressed and loosened. If turf cannot be had, the compost may consist of equal parts of loam and well rotted manure and leaf mould, mixing with the whole a fourth part of pieces of charcoal from about the size of a pea up to that of a hazel nut, which will tend to keep the soil open. After potting give a good watering, and return the plants to the quarters assigned to them the previous year, treating them in the same manner, with the addition of a slight shade for a few days until they have recovered from the potting.

In the end of September, or early in October, the pots should be lifted, for doing so will keep them drier than if they were plunged, and will tend to promote the ripening of the wood, by checking a late growth. By the middle of October the surface soil and that around the sides of the pots should be removed quite down to the roots, but without injuring or destroying them. It should be replaced by the compost recommended for potting, but a year, or not less than six months old, after having been mixed with an equal quantity of one-year-old cowdung. It ought to be laid on level with the rim of the pot, and be made firm. A good watering should then be given, after which the plants may be placed in a cold pit, or cool, dry, well-ventilated house. No more water will be required. In November, or early in December, they may be pruned, which applies more particularly to the Perpetual and Bourbon sections; the Tea-scented and China varieties need not be pruned until introduced into the greenhouse.

To have a late bloom of the Tea-scented, China, Bourbon, and Perpetual Roses, small plants should be potted in six-inch pots in the end of May, or early in June, in the compost already mentioned, and instead of plunging them in the open ground prepare for them a hotbed of dung, 3 or 4 feet in height. This bed being made a week or ten days previous to potting will, by the end of that time, have parted with its rankness and burning heat; spread 2 or 3 inches of sifted tan over the surface, set the pots upon this, and fill up the intervals with tan or sawdust, so as to cover the rims of the pots and the soil which they contain to the depth of about an inch. A bed of tan, 4 or 4½ feet high, is preferable to one of dung, as it retains its heat much longer, and there is no necessity for a second hotbed being made. The plants should be well watered during dry weather, and by the end of July they will have grown amazingly, and the pots will be completely filled with roots. Another bed should be in readiness to receive the plants when the heat of the first, if made of dung, has declined; but whether a dung or a tan bed be employed, the plants are to have nine-inch pots if they have grown well and the varieties are of vigorous habit. Whichever they are, and whether repotted or not, plunge them at once in the new hotbed, or in the old one if it is a tan bed, and in a week shorten the strong shoots to eight leaves or joints, and the moderately strong to six, all flower-buds being pinched off. Water must be given daily in dry weather. I have omitted to mention that the situation should be open, under no circumstances shaded, for their vigour will in a great measure be due to full exposure combined with the bottom heat.

Towards the middle of September, or not later than the end of that month, the pots should be lifted, exposing them for a week half-way, or to one-third of their depth if the bed is still warm, and then withdrawing them fully from the hotbed. In another week remove them to the greenhouse, where the plants will bloom finely in autumn up to Christmas. Water being then withheld, the plants, pruned in February, will produce a fine show of bloom in May in a cool greenhouse. This is the best method that I have tried of growing Roses in pots for a late bloom. The plan is not by any means new; on the contrary, it is a rather old one, seldom, if ever practised, but it deserves to be more generally known. Mr. Rivers first propounded it in the fourth edition of "The Rose Amateur's Guide," published twenty years ago.

The culture of Roses in pots in subsequent years does not vary, for after blooming they may be repotted in pots of the same or of a larger size, and receive a top-dressing of rich compost in autumn. Liquid manure may be given at every alternate watering, from the time of the buds showing until the flowers expand.—G. Abbey.

EVERGREENS NOT GENERALLY KNOWN.

In the large public park belonging to this city (Bath), the endeavour is made to collect all shrubs that are hardy and fitted for the soil, and I have penned some short notices of those I know. The soil is naturally a very heavy blue lias clay, with drifts of oolitic gravel, without a trace of anything resembling peat, so that all plants rejoicing in heath mould or sandy soils cannot be expected to flourish, consequently the list of ornamental shrubs is more restricted than in many other districts.

Aucubas.—At Mr. Standish's first sale I bought a small plant of picta, which was planted out of doors at once, and has become a very pretty bush. It has grown freely, and has been quite untouched by the recent frost. Limbata, sent out by Messrs. Veitch, will be even more beautiful, the margins of the leaves being tinted, not the centre; picta will be handsomer when fully grown, as the central blotch in the young plants does not grow at the same rate as the harder outside green. This centre is often eaten by the snails, whereby young plants are disfigured. A. himalaica is as hardy as possible, and grows more rapidly than the true green Aucuba japonica, or even than the old mottled or the new male.

Of Osmanthus, also bought of Mr. Standish, both the green and variegated kinds are as hardy as need be, and promise to form very pleasing bushes. I have no idea to what family they belong, or to what size they may be expected to grow; looking like Holly, they are of much neater growth.

Euonymus.—The yellow-blotched grows as freely as the original E. japonicus, but quickly loses its yellow colour; whether this will return as the plants grow older is very doubtful, as the old white variegated kind has no marked character, being less effective than the green, and not sufficiently distinct when seen at a distance. All the plants have been pinched by the frost, their tops drooping for some distance. The only way to have the golden Euonymus effective is to be very careful to propagate only the yellow twigs. Euonymus radicans is quite hardy, not being in the least touched by frost. It will probably make a pleasing plant to fill corners, or to grow down walls, as its branches have fibrils resembling those of the Ivy. The branches that have lost their variegation will grow more rapidly than the parent plant. Last year I had from Messrs. Veitch a beautiful variety, Euonymus marginatus, which has grown very pretty, has retained its yellowish white variegation most correctly, and has proved out of doors as little affected as the ordinary sorts. It promises to be a very ornamental shrub.

Elæagnus reflexa is a shrub of very unusual outline, having reflexed branches 6 or 7 feet long, and the whole bush not exceeding 5 feet in height from the ground. The general effect of a large plant is very good, though the colour is dull all the year. In the spring the branches are laden with minute blooms of a very delicate fragrance. The varieties here are the yellow-blotched and marginata. The former, presented to our park by Mr. Godfrey, is as hardy as the parent, which will probably be the case with marginata. The latter, which we had from Mr. Paul, promises to be beautiful, the coloured margin is so clear and bright. Those who wish to plant it permanently must wait for struck not worked plants, otherwise the vigour of the parent will overpower the graft.

Olea ilicifolia is a very handsome compact evergreen, but of very slow growth, and has passed many winters unscathed.

Eurya japonica, a pretty low-growing shrub, is very easily propagated, and of about the same hardiness as the Euonymus, but will not prove of much decorative value, except near the edge of shrubberies. The broad-leaved variegated sort, if moderately hardy, will be more effective. I have had it against a wall for two winters, sheltered by an old window, so that its leaves were just scorched by the frost. These probably would enjoy a peaty border.

Skimmia japonica is perfectly hardy, and blooms and fruits freely, but is of very slow growth.

Quercus glabra will prove a very handsome plant, much resembling in its growth the old Magnolia when grown as a bush, but not so effective.

Photinia has proved hardy here, but the Eugenias require a peaty soil, so they have not succeeded; and Raphiolepis ovata has stood the weather as well as the Euonymus.

The Cabbage Palm of Australia had grown to the height of 3 feet; but all our plants have been killed with, perhaps, one exception. I fear that a large plant of New Zealand Flax, which has stood without any protection the last four or five winters, is also dead. Chamærops Fortuni has been out of doors two years. Each winter it was surrounded by a circle of stakes, over which a mat was stretched, open to the sky; it looked very healthy to-day. The Aralia Sieboldi is sheltered with Laurel branches every winter, but does not at present grow satisfactorily. The Lonicera aureo-reticulata, with its beautiful leaves, especially in the autumn, has proved quite hardy; when growing freely it is much inclined to lose its variegation.—John S. Bartrum, *Bath.*

NEW VARIEGATED BEDDING PLANTS.

I enclose for your inspection a piece of the new Golden Achyranthes, which, except in colour, is a counterpart of the well-known A. Verschaffelti, and will doubtless prove a most valuable plant for decorative and flower-gardening purposes; the contrast between the stem of the plant and the foliage is very striking and attractive. I also enclose a piece of a variegated Euonymus nearly hardy. This is another plant which cannot be too highly spoken of for bedding-purposes, and which is certainly the most beautiful plant of its colour, resembling Graptophyllum pictum in the markings of its foliage. I also send a specimen of Coleus Gibsoni, a plant which I shall use extensively during the present season. All the above will prove acquisitions.—Edwd. Bennett, *Gardener to G. S. Foljambe, Esq., Osberton Hall, Worksop.*

IRESINE HERBSTII IN NORTH AMERICA.

Neither in your Journal nor in other gardening periodicals have I seen any mention of Iresine Herbstii being in flower in England, and I therefore suppose that it has not flowered well with you, if at all. The enclosed flowering tip is from a fine plant in my greenhouse, and if it reach you in as good order as it is at the time of my sending it off it will doubtless prove interesting.

The whole head consists, as you will perceive, of a great many small flowers, each of which, when expanded, is no larger than the head of a common pin; so small indeed are they, that it requires a close examination to distinguish the open flowers from those yet unopened. In colour they are of a delicate straw colour, slightly tinted with green; and the contrast with the glowing foliage is exceedingly good. [The flowers are in spikes, or loose panicles, and have a metallic polished surface.—Eds.]

There was so much talk last spring with regard to the soil and position most suitable to the Iresine, that I put out a number of plants in different places with a view to test this question, and I found the only plants looking well all through the season were those in a northerly exposure, shaded from about ten o'clock in the morning until three o'clock in the afternoon. The very finest plant, now in the greenhouse, and from which the enclosed piece was taken, grew not only in this partially shaded position, but was fully exposed to northerly winds, sweeping over two or three miles of salt meadow, and the Raritan River, about a mile wide at this part. The soil is sandy, well enriched with old stable-manure, made into a compost with leaf mould from the neighbouring woods.

This plant of Iresine stands not less than 3 feet in height by 3½ feet in width; the stalks are thoroughly matured, being quite hard, and, towards the bottom, woody. The general colour of the foliage is a ruddy crimson inclining to maroon, lighted up with carmine and pink, the stems being not nearly so dark as the leaves. Imagine how effective is this beautifully rich foliage, surmounted by plumes of straw-coloured flowers, and with small clusters at nearly every joint.

I must say a word about Teleianthera ficoidea versicolor. Last summer I tried it in dry sandy soil, fully exposed to the sun in the hottest weather we ever had, the thermometer for several days registering more than 100° in the shade. The hotter the weather the more it seemed to thrive, the fine colours coming out with charming distinctness. I am hoping to get the Alternantheras for next summer's trial, and expect great things from them.—George Such, *South Amboy, New Jersey.*

EARLY PEAS.

Before replying to Messrs. Carter & Co. in reference to their note upon my statement, I considered myself bound to discover whether my seed was genuine. My seedsman sold it to me for Carter's First Early, and charged for it as genuine seed. With this house I have dealt for some time, and have always found them honest and upright; I have no right to doubt them now.

In my disappointment regarding Carter's First Early I am not alone; for during last week I met three friends, each a practical gardener, and from them I heard the same statement regarding this Pea as I made in your columns. My object is not to exalt or depreciate any man's pet Pea, but simply to give a fair and honest statement of my experience with new and vaunted seeds.—Ronnoc.

THE NEW KINDS OF VEGETABLES.

As I always read with interest any communication respecting the above I venture to give my own experience for the past few years, for I have tried all new vegetables from time to time as they have been introduced to the public, and have always given them a second chance, not liking to pass judgment for or against them without a fair trial.

I will begin with Peas. For the past three seasons I have tried all the early kinds treated exactly alike in every respect, but in each trial Dickson's First and Best has come off victorious over the following, both as regards earliness and productiveness—namely, Ringleader, First Crop, Dillistone's Early (these three are the same), and Carpenter's Express and Sangster's No. 1, which are identical. Laxton's Prolific I consider one of the very best second early Peas of recent introduction, and one which has not in the least been over-praised. Another, named Albert Edward, which I procured last year from Messrs. Lawson, is of the same class as Champion of England, but much superior to that good old variety, as I had them growing side by side.

As regards Potatoes I have tried all the new kinds that were recommended for garden culture, and find nothing to supersede the old Dwarf-top Ashleaf as a first early, and Handsworth, Daintree's Seedling, and Fortyfold for succession. These are the very best for a garden, as Broccoli, Brussels Sprouts, or any winter vegetable may be planted between every two rows, on account of the short haulm they produce.

I have found nothing remarkable among the Cabbageworts. Dalmeny Sprouts, Albert Sprouts, and Scrymger's Giant Brussels Sprouts are quite useless when compared with a really good strain of the old Brussels Sprouts, which can be had from October till the beginning of April. Of course, this season is an exception, as the frost has made a clean sweep of

everything here, including Cottager's Kale, which is about the hardiest Green we have.

Of Celery I have tried most kinds, but find nothing to equal one of my own, selected from some that stood very late one season without running, and which still maintains its character, as I can have it in good condition some weeks after all other varieties have run to seed. Williams's Matchless I consider the next best Celery in cultivation.

Nuncham Park Onion, I think, will be good, though I cannot speak with certainty till I have grown it another season, but I can say that it is quite distinct from Reading, Trebon, or White Spanish, with which it was said by some to be the same or nearly allied.

In the way of Lettuce, I find nothing so good as Wheeler's Imperial and Victoria for winter, and Neapolitan Cabbage and Paris White Cos for summer.

The Digswell Prize Endive is another valuable addition to our list of salads.—E. Welch, *Palace Gardens, Armagh.*

As the Fearnought Cabbage and hybrid varieties of Brussels Sprouts sent out by us are likely to be more appreciated in future than they have yet been, owing to their extreme hardiness, having stood the late severe frosts without the slightest injury, while many of the other Brassicas have been utterly destroyed, we would venture to throw out a hint which may prove advantageous to such of your readers as may wish to grow them. In many cases new vegetables are grown at great disadvantage, particularly the first year of their introduction, owing to the cultivator not being acquainted with the treatment they require, and are often discarded as being useless and unworthy of a place in the garden without further trial.

The Fearnought Cabbage if not sown early will produce heads as open as Coleworts, but if sown in the first or second week of March, and planted out in due time, it will have nice firm heads before the winter sets in, and will keep longer without bursting than any other of the Brassica tribe, remaining perfectly sound till the early summer Cabbage comes in. Although when growing its appearance is coarse, the flavour is much superior to that of the early dwarf Cabbages.

The Dalmeny Sprouts should also be sown as early as possible, or as soon as the ground will admit; if delayed too long they will not form the Cabbage heads on the top. The same treatment is also requisite for the successful cultivation of the Albert Sprouts and New Dwarf Sprouting Ulm Savoy.—Stuart and Mein, *Kelso, N.B.*

WHAT IS A GOOD CROP OF STRAWBERRIES?

This is the inquiry of your correspondent "S. E. T.," who then goes on to say that had I stated the distance between the rows and the plants my article would have been much more valuable. Now, if your correspondent will again read the article in question (Vol. X., p. 213), he will find there the required particulars. For the information, however, of those who may wish to know what room was occupied by the plants from which I gathered the 96 lbs. of fruit, I may state that they were planted on a piece of ground 17 yards long by 14 feet 6 inches wide, allowing a space of 1 foot 4½ inches outside all the plants, which could not be occupied by any other crop. This is the regular distance at which I plant all my main crops of Strawberries, and I find them succeed better in this way than in any other which I have tried, and I have tried several.

About eight years ago I was living in the neighbourhood of the great Strawberry district—Twickenham, Isleworth, and Brentford, in Middlesex. There I saw many modes of culture and many good crops, some of which, I think, had they been fairly weighed, would have averaged nearly as great a weight as that described.

"S. E. T." quotes my crop as a standard to test others by. This was far from my idea when I wrote, as I think that many of the Strawberry-beds in the country could be made to bear even a larger crop than that described if better modes of culture were adopted.

I should have stated that the land on which this crop grew was three years previously enclosed from an open field, and was afterwards very heavily manured every year for other crops up to the time of the Strawberries being planted. This, I have no doubt, greatly conduced to the production of a heavy crop.

"S. E. T." remarks that a degree of looseness of statement with respect to weights, &c., is prevalent, thereby making it appear that he is doubtful if my figures are correct. Let me assure "S. E. T." that the weights and scales by which the produce was weighed were corrected by the standard; and that I weighed all the fruit myself, in the presence of two other persons, in 14-lb. lots, giving quite half a pound over each time. This I was very careful about; and I should be extremely sorry to send anything to you for publication, no matter how trifling, without first correcting any statement I may have made from notes taken at the time.—John May, *Westfield.*

METEOROLOGICAL NOTES IN 1866 AT LINTON PARK, KENT.

The past year, unlike its successor, was deficient in the one extreme of temperature, which was heard of or felt by every one in the south of England. It was also in no way remarkable for attaining the other extreme; in fact, 1866 may be summed up as having had a mild winter, a rather late spring, a moist but not ungenial summer, and a very mild autumn. Considerably more than the average amount of rain fell; and following as it did the copious downfall of 1865, I find the total amount in the two years is 4½ inches more than in 1855, 1857, and 1858 collectively. The rainfall, however, in 1865 and 1866 having been better distributed than in 1860, these years have escaped being called wet, which the latter will be remembered as, although at this place more rain fell in 1865 than in 1860.

The following notes on 1866 will show some of its leading meteorological features:—

	Rainfall in inches.	No. of Rainy Days.	No. of Frosty Days.
January	3.83	21	7
February	4.55	20	13
March	2.27	17	13
April	2.09	16	2
May	0.81	8	5
June	3.40	9	..
July	2.70	10	..
August	2.15	16	..
September	4.25	23	..
October	1.38	11	4
November	1.89	13	12
December	1.47	15	10
Total 1866	30.79	179	66
„ 1865	35.18	172	80
„ 1864	21.25	156	96
„ 1863	22.75	169	64
„ 1862	26.93	195	67
„ 1861	24.01	168	85
„ 1860	33.66	216	93
„ 1859	29.55	151	93
„ 1858	16.33	116	93
„ 1857	24.33	137	..
„ 1856	27.79	169	89
„ 1855	20.84	160	114

From the above it will be perceived that the frosts here were fewer last year than in any preceding one in the table, with the exception of 1863. This, and probably the great amount of rainfall, are due to the prevalence of south, south-west, and west winds; for in noting the wind at noon each day, and regarding only the eight cardinal points, I find the wind from the above quarters on 214 days in 1866, but only on 122 days in 1855, whilst it blew from the north-east on 115 days against 31 last year. The wind is from the east on a less number of days than from any other direction; even in an unfavourable year thirty-four is the highest number I have recorded, last year the number of days was sixteen.

As an instance of the mildness of the autumn, I may state that on December 30th two conical pillars of Pelargoniums, 7 feet high or more, in quite an open space where there was no shelter so high as themselves within 100 feet, were almost as fresh as in October. Some rather sharp frosts in November had injured the plants, but they recovered, and were quite in a growing condition. Their elevation above the surface prevented damp injuring them so much as it did those elsewhere; and I need hardly say that Verbenas and similar plants were also uninjured.

By way of an appendix to the foregoing notes of 1866, it would be as well to report upon the changes which its successor has brought. The frost, commencing with the last day of 1866, has proved to be one of those special cases of severity which only after a cycle of years we are wont to look for, and as each visitation differs from its predecessor, so has that of 1867 had its peculiarities.

I do not rely on the readings of the thermometer alone as a proof of the cold, or rather of the difference of heat, but on the effects as regards vegetation, which here at least have been so singular as almost to deserve the term capricious; for while at one place Laurustinus and even common Laurels were all but killed, at others in about the same altitude no harm has been done, and yet the conditions in both cases were apparently alike. I may, however, add, that prior to the frost commencing on December 31st, we had had a long period of dull mild weather, with so very little frost that the two conical pillars of Pelargoniums before referred to were quite fresh and looked as well as two months before that date, the injury resulting from some sharp frosts in November having been repaired by the after-growth. Now, it is easy to conceive what effects might follow an intense frost suddenly falling on plants which had scarcely encountered autumn cold; but fortunately for low-growing plants, the first frost was speedily followed by snow, so that when the cold was most intense, a covering of 8 or 10 inches of snow effectually saved many from destruction. As an instance of this, I may mention that we obtained a considerable number of Verbena cuttings, from a bed fully exposed, on the 10th of January, after the first winter had passed away. Plants above the snow-line, however, fared much worse, and it is difficult to state how much damage has been done.

Before, however, I enter into this subject, I may mention that a minimum registering thermometer placed in a perfectly open place about 3 feet from the ground, and at an altitude of about 300 feet above the sea level, did not fall lower than 10°, or 22° of frost, and I have no reason to doubt its accuracy, as no particular injury was done to anything there beyond that which occurs in ordinary sharp frosts; while at less than 200 yards distance from the same spot, and about 40 feet lower down, several shrubs and trees have suffered severely, although in a place sheltered in all directions but the south and south-west. Only a very short distance from the latter spot, and in a situation much the same in every respect, the same sorts of trees and shrubs escaped altogether or nearly so. Now, why was this? Is it possible for a wave or volume of cold air to settle itself in one particular place, and not mix with other portions of the atmosphere less cold than itself? Certainly the stillness of the night would favour this idea, yet it is laid down by those acquainted with the laws of nature, that such an occurrence is not likely to take place in so circumscribed a space. The damage, however, in one particular place was so much greater than elsewhere, that there would appear to have been a difference in temperature similar to that which exists in hot days between the south and north sides of a wall, and which amounts to several degrees; at least, this is the only explanation which I can offer, but, perhaps, some of your readers may give a better reason. I may further add, that the place where the frost seems to have been most severe, was about 250 feet above the sea level, whilst at about 350 or 380 feet the decrease was scarcely perceptible, and it is remarkable that some common Laurels, Laurustinus, and other shrubs growing near a piece of water on cold clayey soil at not more than 150 feet of elevation, suffered less than those 100 feet higher up. Such results are perplexing.

With regard to the effects of the frost, and commencing with common shrubs, I may state that those which have suffered are most injured on the south-west side. Laurestines are in some places all but killed, Portugal Laurels not in the least hurt, common Laurels in places browned severely on the tops, and Garrya elliptica more injured against a south wall than in the open ground. Berberis Darwinii, Wallichii, and aquifolium escaped entirely, while B. japonica and Fortuni look ill. Griselinia littoralis has been much injured where not covered with snow, and still more so is Phygelius capensis; in fact, it is killed to the ground I believe, and the same is the case with some Fuchsias which have withstood four or five winters, and have stems 3 inches in diameter or more. Phillyreas have all escaped, except one singular kind, with long willow-shaped leaves. Colletia horrida is injured, but not so much so as C. bictonensis; the latter, I think, is killed. Sheltered by a wall, Desfontania spinosa seems unhurt, and the new Japanese evergreen Raphiolepis ovata shines as brightly as before the frost. I may add that this pretty little evergreen shrub bears berries most profusely, some plants not a foot high having nice clusters upon them; it seems, however, to be of slow growth, like Skimmia japonica. The latter seems on the whole to be improved by the cold, but it was well covered up with snow, and so were all the Pernettyas that I had planted.

Some plants of the old White Indian Azalea growing near a tree of Pinus insignis, much hurt, were not in the least injured, but the purple variety in some places was very much injured. Camellias planted out, though they have not escaped scathless, were less injured than most things, and Magnolias of some size against a wall were browned a little. Myrtles in some places were all but killed, and I believe Ceanothus papillosus to be quite destroyed; C. dentatus is injured, and I expect to lose some plants, but fear a greater loss in C. azureus. New Zealand Veronicas, both variegated and plain-leaved, are killed to the ground, as likewise is Clianthus puniceus, which has stood several winters with the protection of a mat against it in very cold weather. Euonymus japonicus of the old kind is destroyed where not protected by snow, but the newer Japan kinds, E. radicans and aureo-variegata, are as fresh as ever under the snow. Eugenia apiculata against a wall is injured, but not fatally; and Escallonia macrantha has lost its beauty, but not its life. A hardy Passion-Flower, whose blossoms still lingered with us up to the middle of December, has a very withered look now, but I think the main stems are alive, while a very humble plant with me, Illicium floridanum, is unscathed. Sweet Bays in some places have suffered much, in others scarcely at all. Benthamia fragifera is, I fear, all killed above the snow line. Osmanthus ilicifolius, a pretty Holly-looking plant from Japan, seems as hardy as our native favourite, and its half-namesake Olea ilicifolia suffered as little, but O. europæa was unhurt. Photinia serrulata, whose bursting buds and apparent continuous growth render it particularly susceptible to cold, has not suffered much, but a Nerium Oleander which stood last winter against a wall is, I expect, quite killed now. Arbutuses are scarcely in the least touched, and stand proudly amongst some other things much injured, and I believe all the Hollies are untouched.

Deciduous plants have mostly escaped. Weigela rosea seems fresh, and so does the Deutzia; but my experience in Roses is less important, as we mostly grow dwarf ones and on their own roots, and the snow helping to keep them from harm, the damage is confined to the China and other less hardy sorts. I also find that an edging plant which is not so much used as it deserves to be—namely, Santolina incana, is perfectly hardy. The Chinese Palm, Chamærops Fortuni, is still more so; its glossy green leaves appear to be improved rather than otherwise by the cold. The Pampas Grass has, I fear, suffered to an extent that will prove fatal to half the plants we have; and I am afraid the same may be said of Tritoma uvaria. It is a singular fact as exemplifying the mildness of the autumn, that when the frost set in, in four beds of this plant there were numerous spikes of flowers in excellent condition, and others of different heights rising up from the bottom. The large plants, however, I fear are entirely killed; but a day or two ago I noticed a small one, only a few inches high, in a fully exposed place, with two blooms on it, which were quite fresh and unhurt by the weather, the snow having protected them. I may also remark, in connection with the above fact, that Calceolaria cuttings in a cold pit, with no other covering than a glass light and snow, have not sustained much injury, C. amplexicaulis with one or two other tender varieties being the only sufferers. I must not omit to mention that a fine plant of Ligustrum japonicum, nearly 20 feet in height and more than that in diameter, which has annually furnished hundreds of spikes of bloom, is very severely injured, having been deprived of most of its leaves. The common Ligustrum, L. ovalifolium, has also had its beauty everywhere destroyed.

Of the larger plants, I am sorry to state that my opinion of the perfect hardiness of one or two of the most popular of the Pinus tribe is much shaken, as a fine P. insignis, upwards of 50 feet high and nearly as much in diameter, is slightly injured, and another, somewhat less, has suffered very much. P. excelsa growing in the same situation bears no marks whatever of the cold weather. Pinus Benthamiana and P. ponderosa seem equally hardy, and none of the Picea tribe appear affected, P. pinsapo, cephalonica, nobilis, and Nordmanniana being all as good in appearance as before. The same cannot be said of Abies morinda, as a plant or two growing in an exposed situation are injured on the south-west side, while several others in the grounds have not suffered in the least. I may also add that near to the Abies morinda referred to as being injured there are both Deodars and Cedars of Lebanon in like manner sufferers, the spot they occupy being that where the frost appears to have been most severe; both species are much injured; the trees are 20 or 30 feet high. It is gratifying to find that the more recently introduced Thujas and Thujopses show no signs of injury, although growing in the same situa-

tion, for Thuja Lobbii, gigantea, and Menziesii appear in the same garb as before; and the same may be said of Thujopsis borealis. I hardly know whether to include T. dolabrata in the same list or not, as the plants are small, and were much covered with snow. The new Retinosporas seem to be hardy enough, R. pisifera, which is 8 feet high, being quite uninjured; and the same is the case with R. obtusa, leptoclada, squarrosa, and, I think, ericoides, but I am not certain as to the last. The members of the genus Cupressus also seem to be generally hardy. C. Lawsoniana was not hurt; perhaps there was a shade of difference in the tint of C. macrocarpa as compared with that which it previously exhibited, but it is only a shade; and Taxodium sempervirens growing both in dry and damp situations seems capable of withstanding any amount of cold which is likely to occur in our climate, for I see no difference in its appearance now from that which it offers after mild winters; and the same is the case with Cryptomeria japonica and C. Lobbii. I have, however, to lament a sad accident that befel a specimen of Cryptomeria japonica: a high wind on the 8th of January broke off upwards of 14 feet from the top of our highest tree, which, before the accident, was about 40 feet high, as straight as an arrow, and tapering from only about 10 feet in diameter at bottom to the top. I am glad to say that I expect Cryptomeria elegans will prove hardy, as the shoots, though brown, are not killed, and the rich brown tint which it assumes in autumn before any cold sets in is, perhaps, an advantage rather than otherwise. Some other species of Abies, such as A. polita and microsperma, were too small to report upon. I may, however, remark that Picea lasiocarpa seems hardy.

As we are too apt to magnify present evils as exceeding former ones, it may, perhaps, be premature yet to compare this winter with others of a severe character in years gone by, until the full extent of the injury be known; but at this place the frost has certainly been more destructive than that of 1860–61. The cold in February, 1854, certainly exceeded that of the present year, and as far as I can remember its results were as disastrous, though not to Conifers. I may add that Wellingtonias in all situations have escaped unhurt, whilst other plants hitherto regarded as perfectly hardy have suffered; the mischief here has been chiefly confined to a particular part of the ground that had escaped in former years, and in such a manner as leads to the impression that an intensity of cold prevailed in a certain plot of a few acres in extent which did not exist in another situation of equal altitude but a short way off. This, however, is a subject I can only give an opinion of, but on a more extensive scale there is proof enough that it has been so, as witness the disparity of thermometric readings.

It remains only for me to remark that in the kitchen garden, which here is on a higher level than the dressed grounds, the loss is not so serious as on some occasions; but all tall Broccolis are either killed or much hurt, while dwarf varieties, being under the snow, escaped with more or less damage according to the protection which they had, the advantages of a snow covering being most apparent in a breadth of Spinach, which looks as well now as at Christmas. Of Lettuces and similar low crops the same remark holds good.—J. Robson.

FRIENDS IN CANADA.

"Great welcome makes a merry feast."

The perusal of "Wiltshire Rector's" prose Christmas Carol in the Christmas number of the "Journal" was a source of much pleasure to one English family living in exile in far-distant Canada.

We also, like your worthy contributor, are fond of Christmas carols, and more than one comfortless night have we spent in the keen frosty air in order to indulge in singing, under the window of our rector, the good old carol of "Helmore," as we devoutly shun any of the "Annie Laurie" type. Oh, that the Wiltshire robin had warbled for us! We would have wished him no "bone in his throat;" he would have been doubly welcome; for through the long dreary Canadian winter we have no songsters to enliven us, or disturb the dismal stillness—not even a crow. We, too, should consider ourselves happy to wish our friends a "Happy New Year" in an English temperature.

Fancy, you people in good old England, turning out on New Year's-day with the thermometer at 20° below zero, and a gale of wind blowing! The good old angel Christmas had need come with plenty of good cheer in such an inhospitable climate as we live in; but, although our winters are long and severe, our summers are warm, and all the hardy fruits are grown with much success. Peaches were formerly a certain crop; but of late years, owing to the extreme cold, the result has been very uncertain. Apples, Pears, Plums, Cherries, and the small fruits, with the exception of Gooseberries, all do remarkably well, but as a general rule are very deficient in flavour when compared with English fruit. The native Grapes are also widely cultivated, but the disagreeable aroma which distinguishes them makes them very unpalatable to an Englishman.

As "Wiltshire Rector" remarks, we readers of the "Journal" (our Journal I should have said), seem like brothers, as indeed we are. Nothing is looked forward to with more pleasure in this household than the arrival of our favourite. "Dear me! how late the Journal is this week!" is often heard; and when it does arrive, it is not long before its pages are well read. It seems like one of the connecting links that bind us to "our island home," and nothing in its pages imbues us with a more fraternal feeling than the contributions of "Wiltshire Rector." Long may he be spared to enliven with his genial style the columns of "our Journal;" indeed, we should be sorry to miss the well-known names of any of its regular writers; and until we again set foot on our native land, for I trust our exile draws near to a close, welcome, thrice welcome, to our fireside here will be our weekly friend. I trust that this response from beyond the seas to "Wiltshire Rector's" desire to know more of our fraternity, will prove to him and all connected with the Journal, that their efforts to do good and make life pleasanter have not been in vain.—W. T. Goldsmith, *St. Catharine's, Canada West.*

[The Editors kindly sent to me the manuscript of the above; and I speak truly when I say that no letter that the postman ever brought to me gave me greater pleasure. It reached me on a Sunday morning, while the church bells around were proclaiming the day of rest and blessing to man, and it warmed and cheered my heart; and when, a few hours after, I was leading the sacred service in my own Ivy-clad village church, my thoughts strayed to the kind writer and his family in far-distant Canada, who, perhaps, at the same time were joining in the same holy words. I thank our Canadian friend for his fraternal greeting. I thank him on behalf of "all the regular writers" in this periodical, for he includes all; first and foremost on behalf of the Editors, then on behalf of the rest whose words he frequently reads, and lastly on my own behalf. It is pleasant to know that the bread we have cast upon the waters has not only done a good work, but that we are thanked for it. It is pleasant to put thoughts on paper which have given us pleasure, and then to know that they have given pleasure to others. Our walk in literature is not a lofty one, but not the less useful; we inform the mind, we give hints of use to those who earn their daily bread, and better still, we at times, so it seems, reach the heart. We think we add to home comforts, and make the home circle draw closer, by drawing it around our Journal as a centre. I was aware this periodical was warmly welcomed in many an English home; but it was a new pleasure to find that we brought old England to the mind's eyes and hearts of our colonists, deadening for a while "that wasting pang—home-sickness." We in England join in wishing Mr. Goldsmith and his family well, and, in thought, stretch a warmly grasping hand to them in far-distant Canada. And may they continue to derive pleasure from our pages; and when reading of our English gardens and homes may they feel for a while (so fancy oft cheats man pleasingly), that they are looking at our bright flowers, and listening to our merry English birds. Wishing well, therefore, to all under Mr. Goldsmith's roof tree, and that they may soon walk in English fields and gardens, and be exiles no longer, I remain theirs fraternally—Wiltshire Rector.]

TRANSPLANTING LARGE FRUIT TREES.

On opening your Journal of February 14th I was not a little surprised to see a communication from "T. P. I." on the very trees I mentioned in my paper sent last week. As a commentary on his observations, I beg to state that only a few of the Peach trees had been planted previously to my taking charge of the garden at Oakley Hall. The Pears had been planted two years. The large Apricot mentioned must have been fully thirty years old, and one Pear much older.—Wm. Robins, *Oakley Park, Suffolk.*

West of England Rose Show.—This Show, to be held at Hereford, is postponed to July 9th, on account of the Show at South Kensington being on the day previously announced.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

Tapeinotes Carolinæ (Empress Charlotte's Tapeinotes).—*Nat. ord.*, Gesneraceæ. *Linn.*, Didynamia Angiospermia. Native of Brazil, and named after the Empress of Mexico. Introduced by Mr. Bull, Chelsea. Steve shrub. Flowers white. Leaves crimson beneath.—(*Bot. Mag.*, 5623.)

Angræcum citratum (Citron-yellow Angræcum).—*Nat. ord.* Orchidaceæ. *Linn.*, Gynandria Menandria. Native of Madagascar. Introduced by Messrs. Veitch. Flowers very pale citron colour.—(*Ibid.*, *t.* 5624.)

Impatiens latifolia (Broad-leaved Cingalese Balsam).—*Nat. ord.*, Balsamineæ. *Linn.*, Pentandria Monogynia. Native of Ceylon jungles. Flowers pale purple.—(*Ibid.*, *t.* 5625.)

Clavija fulgens (Brilliant-flowered Clavija).—*Nat. ord.*, Myrsineæ. *Linn.*, Pentandria Monogynia. Native probably of Lima. Flowers scarlet with yellow centres.—(*Ibid.*, *t.* 5626.)

Mesospinidium sanguineum (Rosy Mesospinidium).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Menandria. Native of Peruvian and Quitensian Andes. Flowers pale rose-coloured.—(*Ibid.*, *t.* 5627.)

Barleria Gibsoni (Dr. Gibson's Barleria).—*Nat. ord.*, Acanthaceæ. *Linn.*, Diandria Monogynia. Native of Central India. Flowers dull pale purple.—(*Ibid.*, *t.* 5628.)

Lilium hæmatochroum (Blood-red Lily).—Very dark crimson, with stripes still darker. Flowers very large. Introduced from Japan by M. Verschaffelt.—(*L'Illustration Horticole*, *p.* 503.)

Gladioluses.—*Impératrice Eugénie.*—Large and beautiful; white streaked with rose, and the side segments entirely rose. *Reine Victoria.*—White streaked with crimson. *John Waterer.*—Scarlet streaked with white. Raised by M. Souchet, head gardener at the palace of Fontainbleau.—(*Ibid.*, *p.* 504.)

Rhododendron maroinate-punctatum.—Raised by M. Verschaffelt. Ivory white spotted with crimson.—(*Ibid.*, *p.* 505.)

Myosotis alpestris.—"Myosotis rupicola—or *alpestris*, for the two names are synonymous—is a dwarf perennial, found in a few elevated northern localities in England and Scotland, but always exceedingly rare. We are indebted to Messrs. Backhouse & Son. of York, who exhibited plants at South Kensington in 1865, for the opportunity of figuring so charming a group of it. Mr. J. Backhouse, jun., writing from Teesdale on the 15th of May in that year, observes, 'The wild Teesdale locality of our M. rupicola was buried in snow apparently a feet thick, extending 500 feet down the sides of the mountain (Micklefell), and extending for ten miles along the summit ridges, only two days ago!' and he adds that the M. alpicola of their catalogue of 1864 is a synonym, as also is the M. alpestris of Hooker and Babington; but he goes on to say, 'It is certainly not the continental alpestris, which I believe is only a mountain form of sylvatica.' The dwarf habit and large richly-coloured flowers of this plant render it most ornamental either for moist rockwork with a north aspect, or for the alpine frame, and in such situations it succeeds very well, the principal feature in its treatment being to prevent its becoming too rapidly excited by excess of heat. What it requires is a cold, moist situation, where it may remain at rest all the winter."—(*Florist and Pomologist*, vi., 21.)

ENTOMOLOGICAL SOCIETY.

The first meeting of this Society during the present month was held on the 4th inst., the chair being occupied by Professor Westwood. The minutes of the anniversary meeting held on the fourth Monday in the preceding month were confirmed, at which meeting Sir John Lubbock had been re-elected as President, and Mr. Dunning as Secretary, Dr. Sharp having also been elected as joint Secretary in the place of Mr. Edwin Shepherd resigned. The annual prize of five guineas offered by the Council for the best memoir on some beneficial or injurious species of insect, had been for the second time awarded to Dr. Wallace, of Colchester, for his memoir on the Oak-feeding Silkworm of Japan (Saturnia Yama-mai), and the President delivered his annual address, which was ordered to be published and distributed among the members at the present meeting. The President, by letter, nominated Professor Westwood, Mr. F. Smith, and Mr. Stainton, as Vice-Presidents for the ensuing year.

The Secretary announced that the Council had again renewed the offer of two prizes of five guineas each, for the best memoirs on the anatomy, economy, or habits of any insect or group of insects especially serviceable or obnoxious to mankind. The memoirs to be sent to the Secretary, indorsed with mottoes, on or before the 30th of November next, when they will be referred to a committee to decide upon their merits.

Mr. F. Bond exhibited four specimens of a Lasiocampa, reared by Mr. Mitford, from golden-coloured caterpillars taken on the Kentish coast, and which fed upon Clover and Grass. The perfect Moths differed so much from L. Trifolii, as to lead to the belief that they belonged to a distinct species. Also, a singular variety of Dianthœcia capsicola from York, and four curious monstrosities occurring in the genus Argynnis, the wings of these Fritillary Butterflies being unequally developed. He observed with reference to the habit of the Humming-bird Hawk Moth, of flying about sunny walls and cliffs, that the object was to find out some convenient crevice in which it could take its midday siesta, the insect having two periods of flight in a day. This statement was confirmed by Dr. Wallace, who had found the insect apparently asleep and inert at noon in a hollow shell, which it had selected for its retreat.

The Chairman exhibited a very small and curious variety of Mamestra Brassicæ, captured by Mr. Briggs, of St. John's College, Oxford; and Mr. Ianson, a collection of Coleoptera, collected in Vancouver's Island. Amongst the species were some interesting Beetles, especially a Longicorn, closely allied to the curious Australian genus Hesthesis.

Mr. G. S. Saunders exhibited the nest of a social caterpillar, formed among the leaves of a species of Zeyhera, from the province of Sun Paulo, Brazil. The nest was of a strong texture, and nearly a foot long.

Dr. Wallace mentioned that he had recently observed in Mr. Bree's collection, a specimen of Platypteryx sicula, believed to have been captured by the latter gentleman near Stowmarket. He also exhibited a cocoon of Saturnia Yama-mai, bred in England, together with a very remarkable series of cocoons and perfect insects of the Ailanthus Silk Moth, reared by himself, as well as specimens of the silk obtained by carding from the latter species, accompanied by a series of observations made during his experiments on that insect in 1866. Among the specimens exhibited were cocoons which had been spun up at the end of 1865, but from which the Moth had not yet emerged, having remained nearly a year and a half in the chrysalis state; also, double cocoons spun by two caterpillars conjointly. He had reared more than four thousand of the Moths during the past year, and had observed that the cocoons kept in the darkest places produced the brightest-coloured Moths. He was inclined to believe that S. Guerinii, and S. Ricini, were only local varieties of S. Cynthia. He also mentioned that the eggs of this Moth make a distinct, although slight, clicking sound often repeated.

Mr. Wormold exhibited a collection of insects sent from Shunghai by Mr. W. Pryer, most of which were almost identical with British species. It included, however, a new wild Silk Moth nearly akin to Bombyx Huttoni, Westw.

Mr. J. Gould exhibited Hylurgus piniperda, a small wood-boring Beetle, which was committing great ravages on Pinus insignis in Lord Falmouth's park, in Cornwall.

Mr. C. A. Wilson, of Adelaide, communicated a further series of notes on the Buprestidæ of South Australia, and on Cerapterus MacLeaii, and Calosoma Curtisii.

THE INTENSE COLD AND ITS CONSEQUENCES IN SHROPSHIRE AND CORNWALL.

Church Aston, Salop.—I send you the result of my observations on the degree of cold and its effect in this neighbourhood (Newport, Salop). Its greatest intensity was in the night of Thursday, January 4th, when my self-registering thermometer in the shade, against a wall 5 feet from the ground, indicated 6°, or 26° of frost; but I am inclined to think that the position of the instrument in the north-west angle, formed by a wall and building adjoining, caused it to register higher than it should have done. At Chetwynd Park, within two miles, I am told that the thermometer was at zero.

The frost commenced here with snow on the last day of the old year; it continued until the 6th of January without severity, except on the 3rd and 4th. The thaw continued from Sunday, 6th, to Thursday, 10th, the temperature during this interval rising as high as from 45° to 50°. Frost commenced again on the above date, and continued thirteen days—that is, to Wednesday, the 23rd. During this interval we had no cold so intense as in the first frost, the lowest degree of cold registered here being 15° in the night of the 14th; but during most of this time the thermometer ranged between 20° by night and 29° by day. I need scarcely say that the frost was accompanied with a considerable fall of snow in this, as, I suppose, in every other county. We had snow on December 31st and January 1st equivalent to about a quarter of an inch of rain, as registered by my rain-gauge. On the 10th, 11th, and 12th we had snow equivalent to about one-fifth of an inch of rainfall, and on the night of the 22nd that storm of sleet or snow and rain together, which seems to have been so general throughout the country.

As regards the effects of this frost, as far as we can judge at present they do not seem so disastrous as might have been

anticipated. Although I quite agree with your valuable correspondent Mr. Radclyffe, that it will not be until the spring that we can tell to what extent our Roses and other hardy trees and shrubs may have suffered; yet, as far as my observation has gone, the losses amongst Roses will not be considerable. I have noticed, and I should be glad to know if others of your correspondents have observed the same, that the old two-year-old wood of my Roses seems to have suffered to a greater extent than the newer, greener, less-ripened shoots. I cannot say that any of my Roses are killed, unless it be two or three plants of Triomphe de Rennes, but I fully expect many of those on the Manetti stock to die down to the snow line. Some of them present the singular appearance of having been crushed for an inch or two about this line, not by the bark or stem appearing to be bruised or wounded, but by its discoloration, while the upper part of the branch above this line appears at present quite fresh and uninjured. The only protection I afforded to the bulk of my Roses was to increase the thickness of Nature's best blanket by having more snow shovelled on to my dwarfs, whether on their own roots or on Manetti; and in the case of my newly-budded Manettis the application has been thoroughly successful, as even in the case of some Teas the buds look as green and fresh as the day they were put in.

One beneficial result, amongst others, of the severe frost will be to prove thoroughly the hardiness or otherwise of the new Roses of the last three or four years, and how far Roses on the Manetti are better able to resist the effect of such intense cold than those on their own roots or on the Briar, and it will be a great boon to amateur rosarians if, as the season advances, some of your readers will give lists of what Roses have been killed or suffered most from the effects of the late frost.

None of my hardy shrubs as yet show any sign of injury, though Broccoli and Celery seem to have suffered considerably.

I must not forget to mention, in passing, that so late as January 19th I had a good covering of straw put round some pillar Roses which I was anxious, if possible, to preserve from injury. These are trained to circular iron trainers, and straw was placed round them, to the extent of an inch in thickness, from the ground to a height of 4 or 5 feet, leaving still 2 or 3 feet of the top of the shoots exposed. If this had been put on previous to the severe frost it would no doubt have proved a protection against almost any degree of cold; but as it is, I hope it may still be of use, as I am convinced that plants suffer as much from sudden exposure to bright sun or drying winds after such weather as we have had, as from the effects of the intense cold.

I am surprised to find how little plants have suffered in cold frames in comparison with what I should have expected, for though protected with additional covering, and in the case of the first frost to some extent with straw, the intensity of the cold was such that I expected much more damage to have been done than has been. How is this? Did the late mild autumn cause the loss of ground temperature to be much less than is usual on the approach of winter? and when we came to cover up our cold frames closely, was there, therefore, much more of it than common at this time of year stored up to resist such frost as we have had lately? Unfortunately I had no self-registering thermometer in any of my cold frames, so that I have no means of telling with exactness what was the temperature; but I find the injury to my Calceolarias, Gazanias, Carnations, Tea Roses, and other occupants of my cold frames almost nothing. Verbenas, Humeas, &c., in the same frames have suffered more; but I might, without difficulty, have added such additional protection as would have saved these too.

No doubt the small injury done to vegetation compared with the severity of the past frost is to be attributed entirely to the beneficial protection of the snowfall, which was more or less abundant throughout the country.—Country Curate.

Penzance.—Frost commenced on December 31st, 1866, and continued till January 4th, 1867. The lowest temperature during these days, by Negretti & Zambra's self-registering thermometer, was 27°. In a garden near this place none of the plants enumerated below, excepting Sparmannia africana, then in flower, suffered. On January 11th frost set in again. On the 14th the snow was 5 inches in depth. On the 15th and 16th the minimum during the preceding nights was 15°, an excess of 7° of cold beyond what I have ever observed during the twenty-eight years of my residence in Cornwall.

I find this day (February 6th), that the following plants in the borders and unprotected have been killed:—Hakea acicularis, Sparmannia africana, Eutaxia myrtiflora, Serissa marginata, Acacia armata, Eriostemon pulchellum, Pelargoniums, including some of the Cape kinds which had survived many winters here and in the Scilly Islands; and Alona cœlestis.

Severely injured:—Veronicas (various shrubby kinds), Aster argophyllus, Polygala Dalmaisiana, Gazania splendens, Boronia tetrandra, Myrsine undulata, Centaurea ragusina and gymnocarpa, and Cineraria maritima. Cassia corymbosa has lost the wood of 1866.

Slightly injured—*i. e.*, extremities of shoots pinched:—Myrtles, Erica codonodes, Colletia spinosa, Witsenia corymbosa, Mitraria coccinea, Correa alba, and Hakea suaveolens. Several plants of Ghent Azaleas were unhurt, a young leaf or so at the extremities of the shoots only being destroyed. The same with Camellias, among which there was no damage except where the new growth had already begun.

Unhurt:—Gunnera scabra, Dracæna indivisa, Yuccas, Rhododendron arboreum, Abutilon vitifolium, Erica arborea, Colletia bictonensis, Olea ilicifolia, and Convolvulus cneorum.

No Roses whatever have been damaged; but Fuchsia fulgens, splendens, and serratifolia are killed to the ground.

So many of the plants above mentioned are usually only found under glass during winter, that the effect of the late frost upon them may be useful. The result that most surprises me concerns the Dracænas, of which I have three specimens, one 9 feet and the others 6 feet in height. That they should have survived a temperature so low as 15° was beyond my expectations, especially as, when frost set in after the snow on their leaves had been melted by the sun, the hearts of the plants were covered with a solid block of ice. I speak of these plants as D. indivisa, but some think that they are D. australis.

The Orange trees, Pelargoniums, and Calceolarias in a badly glazed lean-to greenhouse, without any heat but that of a paraffin lamp during the night, had only a leaf here and there touched, although on one night the minimum was 22°, and on three others 23°. In wooden frames matted over, and filled with Zonal and Variegated Pelargoniums, Heliotropes, and other bedding plants, nothing was injured beyond the tips of the Celsias and of the Ivy-leaved Pelargoniums in one corner.

Our district is one in which market-gardening is carried on to a large extent. At this season the main crop is Broccoli, of which acres are destroyed. The Potatoes, fortunately, were still in safety on their shelves, as the practice of November planting has been almost wholly given up in this neighbourhood.—W.

NOTES AND GLEANINGS.

One of the novelties for which we anticipate a large measure of success is a new Black Grape, raised by Mr. Standish, which we noticed in our pages two years ago under the name of Royal Black, but which he has since changed to Royal Ascot, as indicating more distinctly its origin. For some years Mr. Standish devoted his attention to the crossing of Grapes, and one of the crosses he attempted was to get a result partaking of the character of the Muscat of Alexandria and the Trovéren Frontignan; and for this purpose he used the Bowood, which at the time was considered an earlier form and generally a superior variety of the Muscat. To his astonishment, instead of a white Grape he obtained a black one, and instead of a Muscat a variety with a large oval berry, of a character very similar to the Black Hamburgh, and with a sensible though very faint trace of Frontignan flavour. Our object, however, in noticing this subject at present is to report what promises to be its great fertility and wonderful vigour. Mr. Standish has planted a whole house with it for market purposes, and the Vines, though only planted twelve months ago, show on each lateral as many as four large bunches, and on some of the rods we counted as many as forty in all. The fruit is earlier than the Black Hamburgh by a week, and it has the peculiarity of being of a jet black colour long before it is ripe, being in that respect like the Red Chasselas, which colours as soon as the berry is formed. Judging by what we saw of the fruit last year, the remarkably stout stalk, and the short, sturdy, warted berry-stalks, we believe that this will be equally valuable as a hanging Grape as it is for forcing and for its earliness.

—— There are, or shortly will be, one or two vacancies for students at Chiswick. Young men who are desirous of availing themselves of the advantages thus offered may receive particulars by applying to Mr. Barron, the Superintendent of the Garden.

—— Major R. Trevor Clarke asks us to correct an error in

our account of the Society's meeting on Tuesday, the 19th. It was *Dyckia rariflora* which he mentioned as having stood several winters, and not Disa grandiflora.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, give the beds a slight salting; this should be done after soiling; the rains will carry down the salt from time to time. Attend to the due preparation of the ground for the main crops of *Carrots* and *Parsnips*; endeavour to provide charred materials, half-burnt weeds, or leaves. *Onions* may be sown as soon as possible; choose a piece of ground that has been manured for a previous crop, and, adding no fresh manure, throw it into high beds, sow when dry, cover thinly, and roll as hard as possible. The last advice will, perhaps, not apply so well to clayey soils. *Sea-kale*, plant forthwith, salting and manuring heavily.

FRUIT GARDEN.

Vegetation having been so much checked by the late severe weather, the planting and pruning of fruit trees may be carried on with as much propriety as would have been the case in the beginning of February in forward seasons; but the rapid development which results from a week or two of fine weather at this period should be kept in mind, and every preparation ought to be made for the occurrence of frost. The utility of coping-boards for the protection of the blossom of Peaches and Apricots on walls was mentioned in a former calendar, and in reply to a question on the subject I would mention that only temporary copings were recommended. With the exception of the usual projection of 2 inches of stone or other material of a permanent nature for the protection of the wall, any greater projection is injurious to the trees in summer; but temporary coping-boards about 9 inches wide, afford the blossoms great protection from spring frosts, and when all danger of the latter is over they should be removed. They should be made to fit closely underneath the permanent coping, and should be supported by stays or brackets. If the ground is in good condition plantations of Strawberries may be made. Presuming that the runners of last season were planted out in nursery-beds, and the plants are now taken up with good balls by means of a hollow trowel, carefully planted, and well mulched, crops will be obtained nearly equal in the first season, and superior in the second, to those resulting from an autumn plantation. Bring pruning to a close immediately; root-prune overluxuriant trees, allowing about a foot to every inch of diameter at the base of the trunk—that is to say, for a tree of 4 inches in diameter, open a trench 4 feet off, and so on. Uncover Fig trees, but do not prune them until the buds begin to swell. Prune and nail Vines without delay, stopping the fresh cuts with a patch of white lead.

FLOWER GARDEN.

All grass lawns should now have a thorough rolling, and all turfing repairs must be completed forthwith. Where it is absolutely necessary to edge lines of walks let it be done now, and, as soon as accomplished, run the heavy roller several times up and down the edge to soften the cut line. All edgings should, if possible, have a slight inclination towards the walk, and they should only be fresh cut in consequence of irregularities in the line. High-kept lawns should have a single mowing immediately after rolling. During open weather, like the present, if there are any shrubs that are to be transplanted lose no time in completing the operation. All planting should be finished, if possible, before dry weather sets in. Prune shrubs, Roses, &c., in mild weather. Any ground which has not been dug should be left until it becomes somewhat dry and in a fit state for the operation. Examine rockwork, and dress up any plants that are showing for bloom. Fix any stones that may have become loose. Look over the beds of Pinks, and fasten any plants raised by the frost.

GREENHOUSE AND CONSERVATORY.

Poinsettias done flowering in the conservatory should be removed to other houses at work to make new wood, from which cuttings may be struck. Euphorbia jacquiniæflora may be removed to heat, but not pruned, for if cuttings be an object they will break better without pruning, being liable to bleed. The routine here will now be a constant exchange with the other houses or forcing-pit. Nothing should be allowed to remain unless in blossom or in fine health. Secure, if possible, a small amount of atmospheric moisture without drip. Young plants that are desired to form close, neat, and compact bushes, must have all the strongest shoots topped as soon as they grow 2 inches or so in length. This will cause them to throw out young shoots in all directions. To produce really compact and symmetrical plants it is highly necessary to be very assiduous in carrying out this point of management throughout the whole of the growing season. Some of the strongest-growing kinds, especially of Heaths, may be rendered very interesting specimens, having the form of an elongated narrow cone. This is done by encouraging a leading shoot and stopping-in closely all the lateral twigs. The leading shoot is obtained by pruning back the last year's growth about a third of its length, which induces young shoots, the strongest upper one of which is continued as the leader, and the rest are cut closely in. Plants so treated are very handsome and very appropriate in situations where everything is formal, as, for instance, when placed at regular distances by the side of the pathway in conservatories, or in summer by the side of terrace walks. Those who follow up the cultivation of Pelargoniums should have their plants duly attended to in regard to staking out, &c. They will bear shifting the moment the blossom-buds are formed in the terminal points. Water very moderately after shifting until the pot is half full of roots; those not yet shifted will now require watering freely. Tender annuals, as Balsams, Cockscombs, &c., should now be sown; they will come up better, however, in a frame with a slight heat.

STOVE.

Orchids will now be budding fast; beware of drip lodging in the young buds. Where suspicion exists as to danger in this respect, it is sometimes well to remove some of the old coating which surrounds the bud, by which a free circulation of air is established. The fires should be kept sufficiently lively in the early part of the day to allow of a free circulation of air; every leaf in the house should be dry for an hour or two at midday, after which period the air should be gradually withdrawn and atmospheric moisture removed. This treatment will be found to suit the majority of stove plants as well as Orchids. Many of the Justicias, Eranthemum pulchellum, and some of the Begonias raised from shoot cuttings now and kept growing near the glass in a cool part of the stove all the summer, will make good, dwarf, flowering plants by winter. The cuttings are to be rooted in moist heat. All the following plants will be found very ornamental in the winter months. Eranthemum pulchellum has fine blue flowers; those of Justicia flavicoma or calytricha are yellow; Begonia Martiana is deep rose pink, and the Euphorbia fulgens, Poinsettia pulcherrima, and Aphelandra cristata and aurantiaca are of various shades of red and scarlet. There is a variety of the Poinsettia in which the bracts are white. Here alone are materials enough for no mean display in the winter months.

PITS AND FRAMES.

Attend strictly to watering if the weather continue mild and sunny. Persevere in potting off, sowing seeds, and putting in cuttings of all such plants as are most wanted for bedding out. Give air early every morning, and shut up in the afternoon with a good sun heat if possible. Place in heat Fuchsias, Salvias, Pelargoniums, and Petunias that have not broken shoots since potting last autumn. Pot Ferrarias in light, sandy soil, keeping some for planting out in borders in spring.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The work out of doors has chiefly consisted of trenching, digging, and preparing for mending and regulating Box edgings, as, though the weather has been fine and warm, the absence of sun has prevented our heavy ground becoming sufficiently dry to permit of sowing or planting much with propriety. As soon as the state of the ground will permit, preparations will be made for sowing Parsnips, almost the only main crop as to which there need be any anxiety for a few weeks. If early Carrots and Radishes are sown on a warm border, the sowing had better be performed in beds, with ridges of long litter between them from which the droppings have been shaken, in order to cover the beds at night. We escape having to resort to much covering of this kind, by growing most of our earliest Radishes as temporary crops among other vegetables that require longer time, and protection, at least in the earlier period of their growth. Thus the bed from which we are now gathering Radishes was protected with glass during the winter. The next bed has Carrots for the main crop sown in rows, with

Radishes between the rows of Carrots, which will be pulled before the Carrots need the whole space. To succeed these, Radishes are sown between the rows of Potatoes in frames, to be followed by others sown between Potatoes in an earth pit, with a board back and front, on which to rest old sashes or hurdles, the latter thatched or with evergreen boughs drawn through them.

Bottom Heat.—For all such accelerating processes in spring, a little bottom heat is of great importance—that is, a heat ranging from 70° to 75°, and even to 80°, as more than that would be injurious rather than otherwise. This heat we speak of as from 9 to 12 inches below the surface. There is no difficulty in keeping the surface cool enough by the free admission of air. There is little difficulty in securing the requisite bottom heat where there is an abundance of tree leaves and fermenting material from the stables, duly wrought, prepared, and sweetened for the purpose. Where old beds from last season still remain, enough of bottom heat may be obtained for such purposes with but little addition of fresh material, and with little or no previous preparation. Some details respecting such work may be useful to those who are short of material, and wish to make the most of it.

First, as to the two frames filled with Potatoes and Radishes; the bed beneath them was formed of the clearings of the flower garden, Salvias, Ageratums, Calceolarias, &c., with the sweepings of the lawn, the leaves kept chiefly to the surface. These gave out a sweet, mild heat as they slowly decomposed, and the surface of the bed, covered with screenings from the furnaces, helped forward some bedding plants which were just late enough. When room could be found for these plants in the houses, the surface of the bed was stirred, some fresh ashes added; and as the heat was, though mild, too much for plunging Strawberry-pots in, the frames were filled with pots merely set on the surface, each pot being nicely cleaned, decayed and old leaves twisted off, some surface soil removed, and fresh rich compost added. This position gave the Strawberry plants a nice start, and when heat was applied to houses, as Peach-houses, &c., the Strawberry-pots were removed thither. Owing to the roughness of the material, the frames had sunk more at the back than was desirable at this early period; so they were taken off, the bed forked over to the depth of a foot or so, adding a few barrowloads of fresh leaves to give the bed a better slope, the frame put on, nice mellow soil put in, and Potatoes, previously started in pots, planted, and the Radishes sown between. We need not follow these frames further at present. Close to them were two frames set on old hotbeds, now empty, after having contained Lettuces, &c., during winter. We wanted to obtain a little heat beneath the glass of these frames, and could obtain nothing but a couple of loads or so of the litter and dung just as it came from the stables. The frames were lifted off, and all the very rotten material, which could be easily spitted from the outsides of the beds, removed, which left a good sized core, or centre, wet indeed, but not more than half decayed. This was thoroughly mixed with the long, littery, dry dung, the dry and the moist being just sufficient to cause and to keep for a long time a gentle heat from a slow fermentation, and the whole was surfaced with a layer of a few inches of the more than half-rotten material. The frames were replaced, and filled with turves sown with Peas, as noticed last week, and when these are removed the beds will be fit for Potatoes or Beans, or, with the addition of some prepared dung or leaves, for Cucumbers and Melons.

A long earth pit has just been treated much in the same way. Last year about this time, or earlier, that pit, with a board at back and front for sashes to be laid on, hurdles, &c., had about 18 inches of hot fermenting material, chiefly consisting of fresh leaves with a little dung, placed on the bottom, and then soil was put on for Potatoes; and when these were removed, Cucumbers, principally for pickling, were planted, also ridge Cucumbers for table use, Vegetable Marrows, &c. These were followed by late Kidney Beans, which with protection continued to produce till late in November, and then by Cauliflowers taken up from the quarters and put in thickly. The soil in front of the bed had become sodden and soured, so it was removed. A space was also cleared entirely of soil, and an opening made into the fermenting material, now a twelvemonth old. This, though damp, was far from being decayed, and only needed turning and mixing with some fresh material to afford all the heat necessary, the turning itself admitting air and its oxygen to carry on the process of slow combustion, or fermentation. A few loads of this long litter from the stables, and a few barrowloads of fresh leaves, just suited the purpose. As a piece was done and well trodden, mixing the old and the new, the soil from behind was thrown on the part finished, and then what was laid aside at first completed the last part. There is no danger from steam with such an earth covering, and there is the gentle heat beneath which is wanted. A little lime was thrown on the old soil, fresh light loam added, and all mixed together, and the place will be filled with Potatoes before this is in print, and will come in for many purposes afterwards.

We may mention, that in growing Potatoes and Radishes under frames, it is well not to have the soil more than from 6 to 9 inches from the glass at first. This keeps the Radishes short-topped, and as the Potatoes grow the frames can be raised at the four corners on blocks or bricks. In such an earth pit as last described, and of such materials, we may expect the bed to sink gradually about 9 inches before the plants come to maturity, and, therefore, the height at planting-time may be fully 6 inches more than it would be desirable it should be when the Potatoes are full-grown.

These details may help those who would like to have certain vegetables early and cannot afford quantities of sweetened fermenting material. In many cases the heat lost in sweetening might have been utilised, and often we have seen the remains of hotbeds wheeled away when if turned, mingled with fresh litter and dung, and covered over with a part of the old, they would have been quite sufficient for all such purposes as above referred to in winter and spring, and saved many an unavailing complaint about being unable to obtain fermenting material for this or that purpose, and, therefore, being under the necessity of waiting until the ground became warm by the heat of the sun. By such arrangements help can be obtained by heat beneath long before the sun will do much in a similar way.

FRUIT GARDEN.

Went on with pruning, nailing, watching birds, &c., the general work being much the same as in preceding weeks.

Orchard-houses.—As soon as possible we will have these fresh arranged, fresh surfaced, and Peas planted in them. The chief matter we are careful about now is to keep them as cool as possible, with all the air on in safe weather night and day. The longer the blooms are in opening the better we shall like it. The dull weather has also helped to retard the swelling buds. All fruit-buds seem to come earlier than usual this season, whether under glass or in the open air. If we have some bright days soon we shall be tempted, as respects orchard-houses, to dull the colour of the glass a little, by syringing it outside with water coloured by whitening. For the sake of convenience in re-arranging the orchard-houses, we have removed the *Strawberry plants* in pots from them; and what we could not find room for under frames to come on gently, we have plunged in a bed of litter out of doors, and if a severe frost come we can throw a little litter over them, or clean straw. Our plants in pots had too much wet last autumn, but after being dried in the orchard-houses they seem to be all right. Many complaints reach us of the havoc done by the frost in breaking pots, and killing all the outside roots. There is so much trouble in securing good plants in pots that the pots ought to be protected from frost by some means.

It is a long time since we have used fumigating for green fly on Strawberry plants, though we may soon find we are not quite secure, and much of the freedom from insects we attribute to air-giving and a comparatively cool temperature, especially before the fruit is swelling. After that the plants will bear a much higher temperature, but if the air is moist the flavour will be inferior. We should not forget that the plant blooms out of doors early, and the fruit sets when the temperature at night is comparatively low. Had we our will at all times with forced Strawberries, we would never care to have the plants in a higher temperature than from 50° to 55° until the flower-trusses appeared, and never higher when in bloom than 60°, sinking to 55° at night, and rising with sunshine and air to 75°, and a few degrees more if the sun was bright.

ORNAMENTAL DEPARTMENT.

The chief work has been digging, potting, putting in cuttings, and removing plants. Bulbs out of doors will want firming in the soil, and those under glass must be kept near the light to improve the colour. Azaleas, Deutzias, Rhododendrons, Lilacs, &c., will come on fast now if placed in Peach-houses or vineries at work, and just require a warm place in the greenhouse or conservatory when moved there at first. Next month is a good time for potting young plants of deciduous shrubs for forcing, plunging them in a bed during the summer, and mulching with litter until the spring frosts are over. The better such plants are established in the pots, and

the better the wood is ripened early in the autumn, the better will they force in winter and spring.

Securing a Regular Heat by Hot Water, and Making the Most of Fuel.—Of course the furnace-man must learn what every fireplace can do, and the best mode of managing it. The complaints that come to us are chiefly from those who have hot water for small houses, and who either have not enough of piping, not enough of expansion room, have too powerful a boiler, or do not regulate the consumption of fuel by banking up, or the right use of the damper. The complaints are much the same as those which have been partly met in answers to correspondents. A says he will have out his hot-water apparatus and go back to a flue for his little house, as the consumption of fuel is doubled, and his house is generally too hot or too cold, as the fire burns so quickly, and then when it is out the pipes cool quickly. There is B, whose supply-cistern is constantly running over, and to keep the pipes full there is constant water-carrying. Then there is C, who in a small pit has an air-pipe at the highest point of the water-pipes, and several times at night he has just escaped a scalding when walking on the pathway, 2 yards behind, as the boiling water was thrown out in jets, as if from a garden engine. Now most of these evils arise from a greater and a brisker fire than is necessary. It is right to learn from every quarter. A paragraph has been going the round of the papers, telling how Mr. Warren, the celebrated author of "Ten Thousand a-Year," saves fuel, and obtains more heat in his room, by simply placing an iron plate on the bottom bars of the fireplace, the chief use of that plate being to prevent air passing to the fuel directly from beneath. The peculiar advantage of that plate is, that it will become hot, and therefore help to thoroughly consume the fuel next to it. With the exception of the heat from the plate, the same saving of the fuel would be obtained by first allowing the ashes and cinders to accumulate at the bottom to the depth of an inch or so, so as not to permit of air passing up through the bottom bars, the ignition being kept up by the front bars only. We have long acted on this principle, and have gone farther, by placing a brick at the back of the fireplace, so as to keep the fuel more to the front bars, and so throw more heat into the room. Thus, the fire-place in the range in the room in which we are writing is 14 inches long by 9 inches wide, and that might be required at times; but during the coldest days of this winter the space for the fuel was screwed up to 9 inches in length, and a large brick was slipped down behind to throw the fuel more to the front, and, as a rule, the bottom bars were not cleaned out, except at lighting-time, and soon became filled up.

Now, just as in a fireplace it is desirable that no more fuel should be used than would heat the room, so it is desirable that no more firing should be used below a boiler than would give the heat required; and then there is the damper in the chimney to regulate the draught. In addition, however, to the damper and the shut, regulated ashpit-door, much may also be done by regulating the draught of air, if any, through the fire-bars. "D." has just told us that in one of the keen frosty nights he had his house right at 11 o'clock P.M. put on a good fire, as he expected a cold night, went out at 2 A.M., found his house far too hot, and then at 6 A.M. the pipes were cold. Now, by the use of the damper, ashpit-door, and the regulation of the fire-bars, there would be no difficulty when used to the furnace to keep something like a uniform heat in the pipes all night. It is necessary to clear these bars, remove clinkers, &c., on lighting, and this may be required once or twice before banking up for the night, if very coarse material, as breeze and ashy cinders, is used; but when a continuous uniform heat is wanted for the night, and there is already enough of heat in the pipes, flue, &c., then much may be done by patting the fuel down over the bars before adding more, instead of poking it up, and opening vents for letting more air in to supply rapid combustion. In the latter case the fire will speedily burn out, in the former case the fire will be all right in the morning, after giving out a continuous moderate heat all night. With such simple precautions there need be no overheating—no wasting and jetting of next-to-boiling water, however small the place to be heated, if by cistern or otherwise room is left for the natural expansion of water by heat.—R. F.

TRADE CATALOGUES RECEIVED.

F. & A. Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of New and Select Agricultural Seeds, &c.*

J. Backhouse & Son, York.—*Catalogue of Alpine Plants and Hardy Perennials.*

COVENT GARDEN MARKET.—February 27.

Severe as the weather was in the early part of the year, the market gardens furnish us with plenty of the ordinary out-door vegetables. Those of a superior character are supplied in sufficient quantities to keep prices stationary, and consist of good Cornish Broccoli and a superior sort from the Channel Islands. Forced vegetables consist of Kidney Beans, Sea-kale, Asparagus, and Ash-leaved Kidney Potatoes. Pears comprise Ne Plus Meurie, Beurré de Rance, and Easter Beurré. The Potato trade is rather heavy.

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... each	0	6	to 0	8	Leeks ..... bunch	0	6	to 0	0
Asparagus .... bundle	6	0	10	0	Lettuce ..... per doz.	2	0	3	0
Beans, Kidney, per 100	3	0	4	0	Mushrooms .... pottle	1	0	2	0
ScarletRun. ½ sieve	0	0	0	0	Mustd.& Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions.... per bushel	4	0	5	0
Broccoli ..... bundle	2	0	3	0	Parsley.....per sieve	4	0	6	0
Brus. Sprouts ½ sieve	3	6	0	0	Parsnips ..... doz.	0	9	1	3
Cabbage ..... doz.	2	0	3	0	Peas..... per quart	0	0	0	0
Capsicums.....100	0	0	0	0	Potatoes ..... bushel	4	0	6	0
Carrots..... bunch	0	6	0	8	Kidney ..... do.	5	0	6	0
Cauliflower ..... doz.	4	0	8	0	Radishes doz. bunches	1	0	1	6
Celery ..... bundle	2	0	3	0	Rhubarb ..... bundle	0	9	1	0
Cucumbers..... each	2	0	3	0	Savoys ..... doz.	3	0	4	0
pickling .... doz.	0	0	0	0	Sea-kale ..... basket	2	0	3	0
Endive ..... doz.	2	0	0	0	Shallots ..... lb.	0	8	0	9
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	5	0	0	0
Garlic ..... lb.	0	8	1	0	Tomatoes.... per doz.	4	0	0	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	6	0	0
Horseradish .. bundle	4	0	6	0	Vegetable Marrows dz.	0	0	0	0

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples .....½ sieve	2	0	to 3	0	Melons..... each	2	0	to 4	0
Apricots ..... doz	0	0	0	0	Nectarines ..... doz.	0	0	0	0
Cherries ..... lb.	0	0	0	0	Oranges 100	5	0	10	0
Chestnuts..... bush.	10	0	18	0	Peaches.....doz.	0	0	0	0
Currants..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	3	0	6	0
Black ..... do.	0	0	0	0	kitchen..... doz.	2	0	4	0
Figs ..... doz.	0	0	0	0	Pine Apples ..... lb.	4	0	8	0
Filberts.....lb.	0	0	0	0	Plums ..... ½ sieve	0	0	0	0
Cobs..... lb.	0	9	1	0	Quinces ..... doz.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Raspberries.....lb.	0	0	0	0
Grapes, Hothouse..lb.	6	0	10	0	Strawberries ..... lb.	0	0	0	0
Lemons 100	5	0	10	0	Walnuts..... bush.	10	0	20	0

TO CORRESPONDENTS.

Landscape Gardener—Storing Apples and Pears (*An Old Subscriber*).—We should not venture to recommend as "the best landscape gardener in Yorkshire," any one whom we happened to estimate so superlatively, but we know of none. If you refer to our No. 271, page 425, published on the 5th of last June, you will find a lengthy answer relative to storing Apples and Pears.

Brown Patches on a Vine (*Guillaume*).—Most probably it is one of the species of scale (Coccus). Paint the stem and branches with a creamy mixture of soft soap and flowers of sulphur, as often detailed in our columns. The spotting of the berries probably arises from the roots of the Vine having descended into an ungenial subsoil; if so, lifting the roots to near the surface, and keeping this well mulched and watered in summer, will be the best treatment.

Microscope (*A Young Botanist*).—The microscope referred to would answer all your purposes as a botanical microscope. The specimens to be examined need no preparation. Apply to any dealer in second-hand optical instruments.

Insectivorous Birds for New Zealand (*A. B.*).—We believe that they are the soft-billed birds which are there in request. Starlings, wrens, wagtails, fly-catchers, hedge-sparrows, &c., would be acceptable. We shall be obliged by information on this subject.

Camellias (*C. Major*).—Either M. Van Houtte or M. Verschaffelt, both of Ghent, could supply you. There is no firm of Langelier in Jersey now. If you send fourteen postage stamps with your address, and order "The Gardener's Year Book," you can have it free from our office by post. It contains the names of nurserymen throughout Europe.

Planting Potatoes (*A Pota Grower*).—On your "hungry sandy soil," we think 2 feet between the rows and 18 inches between the sets would be sufficient.

Potting Azaleas (*J. H. H.*).—It would be well to defer potting the plants until the flowering is over, for if you repot now it is probable that the plants will not flower so well as if the operation were deferred. In potting the ball should not be disturbed; merely remove any loose soil along with the drainage. The soil you purpose using will answer well.

Potting Fuchsias (*Idem*).—The plants should be turned out of the pots, and most of the old soil shaken away. You may then pot them in seven-inch pots, and in a few days afterwards cut them in closely. When the pots are full of roots shift the plants, before the roots become much matted against the sides of the pots, into those 9 inches in diameter, and in the same manner transfer to 11 or 13-inch pots, whichever size you prefer. You may grow the plants to the height you propose this season, pinching the shoots well back to make them bushy.

Hyacinths done Blooming (*Idem*).—You may plant out the pot Hyacinths in a warm open border after blooming, provided you harden them well off.

Applying Lime and Salt (*C. C. Ellison*).—The mixture may be sown over the ground planted with fruit trees of any kind; but it would destroy the leaves of Strawberries, Cabbages, and Lettuces if it fell upon them.

Twelve Annuals for Pots (*C. T. A.*).—You do not say whether you wish them to be hardy, but we presume that you can afford them a little protection, such as that of a south window or frame, from the time of sowing until the plants are up. Oxalis roses, Clintonia pulchella, Acroclinium roseum, Brachycome iberidifolia, Abronia umbellata, Nemesia compacta insignis, Œnothera bistorta Veitchii, Mesembryanthemum tricolor, Portulaca Blensoni, Schizanthus retusus, Amblyolepis setigera, and double Zinnia elegans. These are what are termed half-hardy annuals, and to them may be added Ten-week Stocks, Asters, and Phlox Drummondi, in great variety. If you wish for hardy annuals, then Sweet Alyssum, double Clarkia elegans, Corcopsis marmorata nana, Collinsia bartsiæfolia, Whitlavia grandiflora, Chrysanthemum tricolor, Linum grandiflorum rubrum, Nemophila atomaria oculata, N. insignis, Linaria bipartita splendida, Mignonette, and Mathiola bicornis. For the greenhouse the following are suitable:—Globe Amaranthus in purple, orange, white, and striped varieties; Browallia elata, and its white variety; Thunbergia alata, and its white variety, which are climbers, requiring support; Amaranthus melancholicus ruber, Balsams, Convolvulus mauritanicus, fine for baskets; Egg Plant, purple and white-fruited; and Martynia fragrans.

Pruning Ivy (*W. L.*).—We would defer cutting the Ivy until the end of March or early in April, as if cut now it remains for weeks a very unsightly object. It should be cut with a knife quite close to the wall. Beyond the unsightliness there is nothing to prevent its being cut now.

Anthurium Scherzerianum and Sphærogyne latifolia Culture (*A. B.*).—At this season they both require to be kept in a stove with a temperature of from 60° to 65° at night, which should be increased to 70° by the end of March, and to 80°, 85°, or 90° by day with sun and air. The atmosphere should be kept very moist whilst the plants are growing freely, but not by syringing them overhead, as that impairs their beauty and sometimes destroys it. The moisture, therefore, should be produced by evaporation from tanks or troughs, or by sprinkling the floors, walls, &c., several times a-day. A fair amount of ventilation must be provided, but not in currents, nor should large quantities of air be given irregularly. The situation should be light and not shaded, and there should be plenty of room on all sides. The plants ought to be kept as near the glass as possible; the pots should be well drained, the rough parts of the compost being placed over the crocks to a depth of about 1 inch, or from that to 2 inches. The compost may consist of two-thirds rather light very turfy loam, the top spit of a pasture cut from three-quarters to an inch thick, and either a year old or charred in a hot oven, and one-third turfy sandy peat, chopped and made rather small, but not sifted, to which add one-sixth of the whole of silver sand, and an equal proportion of charcoal in pieces from the size of a pea up to that of a hazel nut, and well incorporated. Water carefully after potting, and when at rest, but when the roots are working in the fresh soil avoid deluging them with water. A slight shade from very bright sun may be afforded for an hour or two during the middle of the day.

Muscat Hamburgh Grapes Shanking (*S. H. J.*).—Shanking is the great fault of this Grape. The heat you name will not save them, but will rather increase the tendency to the evil. All you can do is to have the roots in an inside border, and to encourage and retain more foliage. The best way to treat this Vine when it is planted in an outside border, is to have it worked on the Black Hamburgh.

Maiden-hair Ferns Losing their Fronds (*Idem*).—The cause of the fronds coming very weak and pale, and some of them dying off is your keeping them in a continual state of growth in the temperature of a Cucumber-house. You should have kept them moderately dry in a temperature of about 50° at night, for at least three months of the year, cut down the fronds when these became brown, and placed the plants in a temperature of from 60° to 65°; they would then have become strong. Give them plenty of moisture, do not roast them, and keep them shaded and well watered, but not saturated.

Inserting Mistletoe Seed (*W. W.*).—You may procure the seed from any locality where the plant is found. The seeds are within the berries, and may be squeezed out and inserted in a cut in the bark of the tree, or placed on a smooth part of the bark on the under side of a branch. If placed on the upper side birds are apt to make free with them. Now is a good time to insert them.

Propagating Wellingtonia and Cupressus Lawsoniana from Cuttings (*Idem*).—The best time to put in cuttings of these is towards the end of summer, or when the growths are complete. The young shoots of the current year should be selected, taking them off quite close to the old wood. They should be inserted in pots or pans in silver sand, the base of the cutting resting about half an inch above a layer of loam at the bottom, over the drainage. The pots should be placed in a warm greenhouse or propagating-house, or set in a frame with a mild bottom heat, and should be covered with a bell or hand-glass. The sand must be kept moist. Though plants will grow from cuttings they are not equal to those raised from seed.

Destroying Plantains and Daisies (*Blue*).—The best plan is to grub them up by the root with an old knife. This, though a tedious, is a certain mode of eradicating them.

Angelica Culture (*Idem*).—You may sow the seed in April, in drills 15 inches apart, in good light soil, in an open situation. Do not scatter the seed too thickly, and when the plants are up thin them to 1 foot or 15 inches apart; or you may sow the seed early in August in the same manner, and the plants come into use in the following year. All the routine culture required consists in keeping them free of weeds, giving a dressing of manure in autumn between the rows, and forking it in in spring.

Lilacs Leggy (*W. H. Franks, jun.*).—You will do well to cut out the old stems to the ground with a saw as you propose, and to cut back those left to 4 feet, but if naked at bottom cut them away altogether, and leave those branches coming from the bottom. Do it at once.

Cabbages (*Idem*).—The plants are too young to apply liquid manure to. It should not be given until they begin to heart, and should then be poured between the rows and not on the plants or on their stems. If strong dilute it with water. Urine will not hurt them if mixed with water and other matter. Your plants are eaten at the surface of the ground by what is known to gardeners as the Leather-coat, a dirty grey-coloured grub as you describe it, about an inch long. By taking the soil from around the stems of the plants you may find more of these destructive grubs. Search for and destroy them, the only remedy we know.

Pipes Partially Heating (*Ardavon*).—You do not tell us how you have placed the pipes. We suspect that the side of the house next the boiler has the pipes placed higher than those on the other side that do not heat. Are the pipes at the farther end of the house higher than the end next the boiler? and is there an open air-pipe or small cistern at the farther end? These may make all right. Let us know.

Vinery and Forcing Vines (*H. W.*).—We have looked to the 7th to make sure of your case, and now with the further information we reply:—1, We would keep up the division into two of the 80-feet range, as that will enable you to have the end division next the boiler much earlier if you so wish it. 2, Whenever there is the necessity to keep the water boiling in the pipes, and so boiling over at the supply-cistern, which is placed at the end of the first division, there will soon be waste enough of fuel to purchase extra pipes. If your stop-cocks are right we do not clearly see how the running over a little of the supply-cistern empties the pipes in the farther house. 3, To prevent this running over of the water a larger cistern must be procured, so that when the water is cool it need not stand much above the level of the pipes, and then there will be room for expansion as the water heats. If you fill a teakettle with water the water will run over before the kettle boils, and all the more quickly in proportion to the small quantity of water contained in the kettle, and to the extent of surface exposed to the heating medium; and on the same principle the expansion will take effect more quickly in small pipes than in larger ones, in three-inch pipes than in four-inch pipes. Were you to have double the quantity of piping, or more, you would be less troubled with the water boiling over, and most likely would not require to enlarge the cistern that supplies the pipes. 4, For very early work you would need three three-inch pipes to be added to your present two; or, if it pleased you better, you might make two four-inch pipes answer. For the farther house you might allow it to remain as at present for a late crop; or, if to succeed the first, and pretty early, add one more three-inch pipe to that which you have already. As you have the three-inch piping it would be best to finish with three-inch pipes. They are sooner heated than four-inch pipes, but they are also sooner cooled. 5, Of course the circulation in your first division is complete in itself, and is only prevented going on by the stop-cocks, by which also you regulate the heat in the farther division. If you worked both divisions at once, then your supply-cistern might be at the farther end of the farthest house; but to work them separately you had better allow it to remain where it is. 6, We cannot advise you as to the best and most economical mode of making additions to the piping, as we do not know how your present pipes are placed. The best plan would be to alter your pipes at each end, and connect them with a T-piece, and as many holes in it as you wish to have pipes. Supposing your present two-inch pipes are placed, the flow above the return ° , then suppose you add two pipes, your cheapest plan would be to make the two additional flows where they would stand thus—° ° °, and the two side ones would be connected with the centre one by means of bent one-inch pipes. A similar pipe would connect these again with the one return at the farther end. The best way to do this is to have caps to fit the ends of the three-inch pipes, and have strong inch pipes, one end fastened into a hole cut out of the side of the present flow, and the other end screwed into the socket cap, and the same connecting the additional flows at the farther end with the return-pipe. Thus, with four socket caps and four pieces of one-inch piping, you may connect two more pipes with your present ones with little more trouble than drilling the holes in the present pipes. This plan we know will do very well, but we do not say that it is as good a plan as having all the pipes connected in the usual way, yet it is a very handy one for making additions to the heating medium, as we have several times proved. These caps and one-inch connecting pipes are supplied by all dealers in hot-water piping.

Planting out Forced Strawberries (*E. C.*).—The matter has so often been alluded to by us, that it is hardly necessary to say more than that, as a general rule, we uniformly plant out the greater part of our forced Strawberries, *not* when the fruit is gathered, if that is at all early; but all the earliest plants are generally turned out of their pots against a fence, where they can be protected from changes in the weather by a few branches, or a little rough litter in severe weather. We should not expect much from Strawberry-pots taken out in frosty weather in March from a medium temperature of 60°. All or most of the latest-forced—say in May and June, are generally turned out at once. The earliest would be as well kept in their pots until planted out, but we generally want the pots, and in that case the balls are placed close together, a little leaf mould thrown among them, and a few evergreen boughs kept at hand to protect them from severe frost, and then we generally turn them out in well-stirred and moderately well-enriched soil about the beginning of May. If a few plants do not show fruit at all we generally throw them away at once. The earliest-forced, if thus treated, generally yield some good gatherings in autumn. For extra crops in the following year (that is the forced plants of 1866 bearing out of doors in the summer of 1867), we know of no mode that will equal this for quantity of produce. Such plants, however, do best the first season. They will not be nearly so good in 1868, and very poor in 1869. As far as our experience goes, the first crop from such plants is far superior to that obtained by any other mode the first season after turning out young plants. As stated above, however, the first crop is the only one out of the common way.

Seedling Rhododendrons (*A Lady Gardener*).—The seedlings from the Hybrid Scarlet and other Rhododendrons would certainly produce flowers finer in size and colour than the seedlings or even old plants of the common Rhododendron. If your garden is of limited extent, and only a few plants are required, we would advise the best named sorts only to be planted, though the others would do well for borders. We do not know the Rhododendron respecting which you inquire; but we think Victoria, one of the Hybrid Scarlets, would suit you as to colour, its flowers being of a rich plum or claret crimson hue.

Cutting Back Fig Trees (*An Old Subscriber*).—The best time to do this is when danger from frost is past, and that will be in the early part of May for trees against walls or in the open ground.

Salt for Sea-kale—Running to Seed (*A Cambrian*).—Salt is good for Sea-kale beds; you may sprinkle it over the ground in about half the quantity required to kill weeds on gravel walks, keeping it away from the crowns. When the plants begin to run to seed you will ensure crowns by cutting off the flower-stems at the second or third leaf before they flower. Never allow seed to be produced if you wish for good plants and many crowns.

HEATING AND PLANTING A CONSERVATORY (*G. S. H.*).—The four hot-water pipes would do what you want, but they would do better if they were on the same level; three flows and one return. For Clitoria and Medeola we would substitute Bignonia capensis and Kennedya Marryattæ. For the back wall we would use Acacia armata, and A. Drummondi; and for the ends Passiflora kermesina, Bignonia chirere, Kennedya Comptoniana, and Jasminum samhac. Oranges, Lemons, &c., would do well against such a wall.

EXPENSE OF A GARDEN (*J. S. S.*).—We consider that £16 would be ample for seeds for three acres of kitchen and one and a half acre of pleasure garden, unless you dipped deep into expensive novelties. In ordinary circumstances, about six men under the gardener should manage such a place; but we have great hesitation in giving an opinion, as we have known more men work harder in the space of one acre than the same number of men did in six or seven acres. Much depends on the character of the soil, the succession of flowers, and general cropping, obtaining everything possible from houses, or being content with crops when they come. In most cases an employer can easily judge from seeing how the men work, and the judgment used in setting them to work. We have great faith in activity and industry; we have no faith in mere working long hours, and we know that must be done in some places, and then the desired result may not be secured. Regular hours and adhered to are best for all parties, and then exceptional cases coming seldom will be attended to with zest and pleasure. Our reluctance to give a decision rests very much on what is done. For instance, here is a gem of a lawn, on which there is scarcely a Plantain or Daisy to be seen. To keep that in such a state requires a far greater amount of labour than another where Daisies and Plantains rival and more than rival the grass. We quite agree with you as to coloured earths, &c., as a substitute for flower-beds. When so used the figure looks best when all composed of such coloured materials. Avoid having a bed of flowers and then a bed of coloured earth, nothing will look more incongruous.

CONSTRUCTING A MELON-PIT (*Idem*).—A very good Melon-pit, a lean-to, and useful for general purposes, may be thus constructed:—Width, 8 feet; height at back, 7½ feet; height in front, 4½ feet; path at back, 3 feet, which will admit of several nine-inch shelves being placed against the back wall, which will be useful in winter and spring especially. At the width of the path from the back wall, build another wall, 30 inches or more in height. This will enclose the bed. At the bottom of that have two four-inch pipes, cover them with 4 or 5 inches of open rubble, next with an inch of fine gravel, then with 20 inches of soil. Have two pipes in front for top heat, and train to a trellis, 16 inches from the glass. A first-rate span-roofed house may thus be formed for early and late work:—Width, from 12 to 14 feet; height at sides, wall, 3 feet; height at apex, 8 feet; path down the middle, bed on each side, and heating below and above, as already stated. There will be no necessity for dung; have a trellis for training.

SHADING MATERIAL (*M. R. C.*).—The best material we have tried is tiffany No. 3. It should be tacked to a roller 2½ inches in diameter, a strip of cloth being placed over it, and the tacks passed through both into the wooden roller. The other end of the material should be fastened to a strong lath 2 inches wide and three-quarters of an inch thick, the shred of cloth being used as for the roller to prevent the material coming away in consequence of the nails. This lath should be nailed on the rafters at the upper part of the house, the material being the full width of the house. The roller should be attached to a wooden winder to receive the cord, so that the blind may be wound up or down, wrapping itself around the roller as it is let down, and off when it is wound up; to this the cord should be nailed, and a pulley being fixed at the top of the house, and the cord put through it, the blind may be rolled up or let down at will. It is best put on outside the house, for which purpose only the above plan is eligible.

PLANTS FOR BEDS FROM SEED (*T. Tucker*).—You may fill your beds by sowing seed of the following early next month in a gentle hotbed:—Venidium calendulaceum, yellow; Tagetes signata pumila, yellow; Lobelia erinus speciosa, blue; Calceolaria scabiosæfolia, yellow; Dwarf French Marigold, orange, and striped; Petunia hybrida, various; Ten-week Stocks, the Large-flowering being best; Asters, particularly the Victoria, and Phlox Drummondi in variety. When sufficiently large to handle they should be pricked off and grown on. The following, which require the same treatment—namely, Cineraria maritima, silvery foliage; Perilla nankinensis, brown-bronzed foliage, and Amaranthus melancholicus ruber, with red foliage, you will find useful. Of hardy annuals you may have Sapouaria calabrica, pink, and its white variety; Tropæolum Tom Thumb Beauty, scarlet, crimson, and yellow varieties, and King of Tom Thumbs.

DAHLIAS FOR EXHIBITION (*J. Pritchard*).—The following are first-rate—Leah, deep golden yellow; Ne Plus Ultra, bronzy rose; Charlotte Dorling, white ground, edged and tipped with rosy crimson; Lord Derby, rosy crimson; Andrew Dodds, dark maroon; Bod Ridley, red; Miss Henshaw, white; Anna Keynes, white, tipped with lilac rose; Willie Austin, buff; Criterion, delicate rose; Lilac Queen, lilac; and Beauty of Hilperton, purple.

RAPHANUS CAUDATUS CULTURE (*Tyro*).—Its treatment does not differ from that of the common Radish, only the pods and not the root is the part used. The seeds may be sown in pots in good light soil about the middle of April, and placed in a gentle heat. When the young plants are large enough to handle, they may be potted off singly in small pots; but a better plan is to sow the seeds singly in small pots, and when a few inches high to harden off, and plant out 1 foot apart every way in a sunny, open exposure, the soil being in good heart. This Radish prefers a lightish loam. Water will be necessary during hot weather. The seed may be sown in the open ground in May, or plants may be grown in pots in the greenhouse; for a single plant a nine-inch pot answers well. The height is dependant on the treatment.

PELARGONIUMS (*S. R.*).—*Twelve Select Show.*—*Charles Turner, *John Hoyle, The High Admiral, *William Hoyle, Celeste, British Sailor, *Pretty Mary, Ardens, Conqueror, *Clara, Diadem, and Novelty. *Six Select French Spotted.*—*Butterfly, Neator, *Wallace, *Alphonse Duval, Madame Lelandais, and Eugène Duval. *Six Fancy.*—*Duchess of Somerset, *Silver Mantle, *Clytie, Mrs. Ford, Acme, and The Rover.

TWELVE SELECT SINGLE AND DOUBLE-COROLLAED FUCHSIAS (*Idem*).—*Queen of Whites, *Diadem, *Dreadnought, *Blanchette, *Land of Plenty, *Charming, Excellent, Marvellous, Banks's Beauty, War Eagle, Rose of Denmark, and Sunshine.

SOIL FOR ACACIA DRUMMONDI, ARMATA, AND CHOROZEMAS (*Idem*).—All thrive well in a compost of two-thirds turfy sandy peat, and one-third turfy loam, adding one-sixth of silver sand. Provide good drainage. They require the same treatment as most greenhouse plants, affording them a light and airy situation.

VALLOTA PURPUREA (*Idem*).—Use a compost of turfy loam and one-third leaf mould; afford good drainage, and an abundant supply of water whilst it is growing, with a light and airy situation when at rest, and but little water.

CONVOLVULUS MAURITANICUS FOR BASKET IN GREENHOUSE (*Idem*).—This is one of the best of basket plants. It requires a compost of turfy loam, peat, and leaf mould in equal parts, with a free admixture of sand. The basket should be lined with moss to keep the soil in. Afford a light situation and plenty of water.

PRIMULAS DISEASED (*W.*).—We should remove the whole of the soil, shaking the roots free from it, and repot in entirely fresh soil with a little charcoal or charred material mixed with it.

ROSES FOR HEAVY CLAYEY SOIL (*W. Clay*).—Questions should be more particular. Leaving out Œillet Parfait, a beautiful but tender variegated Rose, all the summer Roses that I have ever had are suitable to any land or climate. No other kind of Roses is equal to or even near to them in adaptation to all soils and climates. I have had these Roses in chalky soil, light loam, and heavy, wet, sandy loam, chiefly ground plants, on Manetti stocks or on their own roots; and, with proper attention, I can recommend them; but, to careless people, I recommend no other Roses than summer Roses on any stock, or autumnals on strong "own" roots. It is ridiculous to suppose an autumnal Rose on its own roots, or on any other stock, without root-protection, could survive such weather as we have had. The power of endurance, however, depends not only on the sort, but also on the condition of the plant. *Hybrid Perpetuals.*—Charles Lefebvre, Jules Margottin, John Hopper, William Griffiths, Baron Prevost, Senateur Vaisse, General Washington, Victor Verdier, Madame Verdier, George Prince, Dr. Andry, Caroline de Sansal, Reine d'Angleterre, Madame Clemence Joigneaux, Vicomte Vigier, Duc de Cazes, Duc de Rohan, Maurice Bernardin, Madame C. Crapelet, Madame Bontin, Maréchal Vaillant, Triomphe de Paris, Jean Goujon, La Ville de St. Denis, Anna Alexieff, Madame L. Carique, Beauty of Waltham, Empereur de Maroc, Madame Julie Daran, Souvenir de Comte Cavour, and Duchess of Norfolk—thirty-one plants; they have wintered beautifully here. *Bourbons.*—Acidalie, Sir J. Paxton, and Bouquet de Flore; under a south wall, Souvenir de la Malmaison. *China.*—Mrs. Bosanquet—the cream. *Tea.*—Sombreuil. *Tea-scented Noisettes.*—Gloire de Dijon and Maréchal Niel, very hardy. *Noisettes.*—Aimée Vibert and Mad. Masson, both small and very pretty; not large enough for show. If land is cold and clayey, it must be drained and rendered lighter for Tea and Tea-scented Roses. All Roses like well-managed clay.—W. F. RADCLYFFE.

CYCLAMEN FLOWERS SMALL (*C. N. B.*).—Without seeing the plants we are unable to say positively whether yours is the same variety as that you saw. From your description we think it was *C. persicum*, the flowers of which vary considerably in size, according to the variety and the mode of cultivation. Not knowing what your treatment is we cannot offer any suggestions.

ORANGE AND LEMON TREES (*L. J. P.*).—Write to Messrs. Rivers, Nurseries, Sawbridgeworth, Harts. If you use blinds for your conservatory tiffany is as good a material as any, but painting the inside of the glass with a solution of size and a little whitening mixed in it is the least inconvenient.

NAMES OF PLANTS (*J. H.*).—No. 1, Spiræa salicifolia, Willow-leaved Spiræa. It is a native of Siberia, but occurs wild in Westmoreland, Cumberland, and elsewhere in England. The seeds are astringent. The other specimen is too imperfect for identification.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending February 26th.

DATE.	BAROMETER.		THERMOMETER.				WIND.	RAIN IN INCHES.	GENERAL REMARKS.
			AIR.		EARTH.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 20	30.479	30.407	58	41	49	46	W.	.06	Hazy; fine; very fine at night.
Thurs. 21	30.485	30.428	57	37	49	46	S.W.	.00	Uniformly overcast; overcast throughout.
Fri. .. 22	30.412	30.328	52	36	49	46	S.W.	.00	Overcast throughout.
Sat. .. 23	30.456	30.406	56	30	49	46	S.W.	.00	Fine; very fine; clear and fine at night.
Sun... 24	30.216	30.133	54	35	48	46	S.W.	.00	Densely overcast; fine throughout.
Mon... 25	30.146	29.965	50	38	48	45	W.	.01	Fine; very fine; densely overcast; slight rain.
Tues. . 26	29.990	29.960	45	35	48	45	N.E.	.00	Slight drizzle; hazy; overcast.
Mean	30.312	30.232	53.14	36.00	48.57	45.71	..	0.01	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BREEDING DARK BRAHMA POOTRAS.

Every frequenter of our poultry shows must have noticed the gradual and steady increase in the Brahma classes, showing a correspondingly steady growth in the popularity of the breed. In fact, no breed of fowls has made such rapid progress of late years, and with an utter absence of anything like a "mania," this is a sure evidence that great and real merit is at the bottom of it; and such is certainly the case. As layers Brahmas are in the very first class; as table fowls they are of fair quality, much better than Cochins, though certainly not equal to Dorkings; and as sitters, whilst their behaviour is unexceptionable, it may safely be said of them that the propensity to incubate occurs just often enough to be reliable and useful, without being troublesome. Such merits are quite enough to justify their great and growing popularity, the more so when combined with the very strongest constitution and capacity of bearing confinement of any fowls we know.

The last-mentioned qualities recommend Brahmas most strongly for family use, as the chickens may be reared with facility at any time of year. To illustrate what I mean, I will just say that I hatched on July 31st last year six chickens, of which one perished by accident within a few days. All readers of "our Journal" well know what weather followed that date, yet the chickens had not even the shelter of a shed, my yard being full. They had literally no cover but the board coop in which the mother was confined. In November the smallest of the cockerels was attacked with cramp, and on the 29th of that month was killed, weighing when dead, at barely four months old, precisely 4½ lbs., or much more than some chickens that are reared professedly for the table.

It is, I believe, these solid useful qualities that are bringing the breed so rapidly into repute, and, doubtless, many who this year are beginning to breed Brahmas, will only regard them as so many stock fowls, and make up their yards accordingly; but many, I have been led to believe, will be glad of somewhat more information than they can gather from any published poultry book, and I purpose to lay before such a few dottings respecting the Dark-pencilled variety, which may help, I hope, to a somewhat higher "Standard of Excellence," and be some guide towards success in competition. At the same time I lay no claim to any monopoly of information on the subject, and wherever I may be silent, I shall feel grateful if any one who may have benefited by my knowledge will help me and others with his. There is need for all we can obtain, for I am quite sure that with the exception of the Game fowls, there is no breed which it is so difficult to breed in perfection as the Dark Brahma. Almost every one has a different idea of a perfect bird, and the selection of stock requires the nicest judgment and discrimination.

I would observe, first, that size is a very great point in this breed, and ought to weigh more than it often does, for the consequence of neglecting it is that the standard is degenerating. I was glad, on this account, to see that the judging was greatly determined by weight at Birmingham, though I am no advocate for this ludicrous way of judging a fowl, and have not a word to say for such awards as passed over some of Mr. Boyle's best birds with hardly a notice. All I contend for is, that size should be *one* main point to be considered in judging a pen, and I would call no pen first-class in which the cock did not weigh 13 lbs., and the hens 9 lbs. Good pullets ought to weigh quite 1 lb. per month by the time they are fit to show. I give these, of course, as unfatted weights; if confined and liberally fed Brahmas will make enormous birds, and are often treated so, but are thereby ruined for breeding. The standard I have given used to be often exceeded, and I have now a hen of unexceptionable form and colour, which weighs upwards of 11 lbs. as she runs in the yard. I believe were more attention given to size, such a weight might be ordinarily attained.

Correct form is of the utmost importance, as this breed is one too much contaminated by crosses. The back, especially, should be wide and very short, with a large and ample cushion in the hen. In a good bird this cushion ought to rise nearly from the very bottom of the neck, giving almost no length of back at all, and forming a large protuberant mass of soft feathers, almost hiding the tail. The "fluff" also should be abundant and "stand out" well, so that the tips of the wings should be well tucked in, and almost buried in the fluff and saddle feathers. Very great width and depth of body, without much length, are the points to seek after. The legs cannot be too short or too heavily-feathered, provided they be not vulture-hocked, and it is essential in a first-class bird that they be wide apart. It is disgusting to see so many knock-kneed cocks as often appear in a class, and any bird whose legs do not stand well and firmly apart should never be bred from. I may also remark that "fluff" in the cock is too much neglected. I do not like vulture hock, but it is possible to be *too* much afraid of it.

The neck ought to be short and very taper, a good Brahma head being decidedly small. By far the greater number of the hens I see disgust me by their great, coarse, cruel-looking heads, which are, I believe, derived from the Grey Dorking, and have nothing to do with the true Brahma. The head of a pure-bred Brahma pullet is very small in proportion, of exquisite taper, and the expression, though sprightly, remarkably gentle and pleasing. No test is surer than this one of the *purity* of a strain, whatever its other merits may be. I may also remark that in perfect birds of both sexes, the deaf-ears should fall *below* the wattle; but this is a point which does not now seem much attended to.

Faults in shape to be avoided are—long backs, narrow bodies, long necks, or long legs; and, lastly, let any birds which approach the Cochin type in the narrow and deficient breast be at once discarded. A deep, full, and even protuberant breast is a marked peculiarity of the Brahma breed, and any cock or hen in which it does not appear is of a very inferior order.

The more fancy "points" I must leave till my next communication, but would just observe here, that they must be especially sought in the cock, whilst for size, good form, and shortness of leg, we must chiefly look to the hen. You may have a late-hatched cock, and, consequently, a small one; but if he is good in form, colour, and other points, and of a sound constitution, active and lively, he may breed chickens of the very first class, when mated with good, large, well-formed hens. Small hens, however, you must not breed from, unless you are content to exhibit small chickens. On the other hand, if the hen be large and well-proportioned, she is not to be discarded for a slight fault of feathering or comb. If the cock be good in these, a large proportion of the chickens will be all they should be.

As Brahmas are very largely kept and bred in confinement, I will add one more caution: Do not let your breeding birds become *fat*. This is the one great difficulty of amateurs with limited space, all the larger breeds having a great tendency to lay on too much flesh when kept in confinement. Such will never breed fine large chickens—the system is overloaded. Give your birds enough, but no more. Keep them so that they shall always have a good appetite. A pen of breeding birds, to afford the best results, should always look rather thin, but not, of course, very much so; and if any reader have tremendous hens which lay small eggs, let him herein learn the reason, but by no means fly to the other extreme and starve them in revenge. Such is by no means the meaning of—Nemo.

(To be continued.)

BREEDING GAME FOWLS.

(*Continued from page* 153.)

In breeding in-and-in, too close breeding is, of course, objectionable, such as breeding from father and daughter, from mother and son, and from brother and sister; of the three, the last is the best, but all three are unnatural. A person breeding only one strain or colour should have two breeding walks or runs, and should change the cocks from one run to the other, for doing so crosses the birds a little. A good cross of the same colour every five years is a good plan, but one every ten years is quite sufficient, and is, perhaps, the most correct way of breeding with really good birds, which would spoil by too frequent crossing.

A valuable brood cock may be bred from until he is eight or nine years old, by keeping him from any hens from midsummer until Christmas, in a good walk either by himself or along with all the cock chickens and young stags, which he will prevent from fighting, separating them himself directly they commence hostilities. His spurs must, of course, be blunted, or he might kill the young birds while separating them in their frequent battles. As soon as the "stags' heels," or spurs of the young cocks begin to grow sharp, these should be taken from the old cock's walk, dubbed, and put out to a walk, each

separately of course. The old breeders for the pit found this plan answer remarkably well, and they kept their brood hens with the young pullets in the same way in another good run. This prevents both cocks and hens from exhausting nature when eggs are not required for breeding-purposes. The crossing of different colours is absurd, and is only practised by inferior breeders. No pure-bred birds can be obtained from crossing colours.—Newmarket.

(To be continued.)

THE LONG FIRM AGAIN.

A person who gave his name and address as "J. R. Reid, 54, Pott Street, New Islington, Manchester," replied to an advertisement of mine in The Journal of Horticulture, and, after a short correspondence, he agreed to have the birds at my price. I was to send them off at once, and a post-office order would be sent on their arrival. I wrote, asking for a post-office order on the usual terms, but did not hear further from "J. R. Reid." I also obtained information through the Tradesmen's Protection Society; the answer was short and to the point. I am given to understand the Long Firm are very busy just now, and are obtaining a great many goods from unwary persons. The letters have printed headings, some of them with more than one address. I hope these few lines may be the means of putting some one on his guard.—Joseph Walker, *Haya Park, Knaresborough.*

NEW INCUBATOR.

Mr. Brindley makes a serious error when he assumes, that because he left an incubator at 102° at 10 p.m., and found it at 100° the following morning, the temperature therein had not varied more than 2° during the night. Had he used maximum and minimum thermometers he would probably have found that the variation had, in fact, been very considerable, and that at 4 or 5 a.m., the coldest period in the twenty-four hours, the thermometer had fallen to 94° or 92°, though it rose again to 100° by 8 a.m. I speak advisedly on this point, as I have just concluded a series of important experiments, carefully carried out, on the construction of incubators.

I have succeeded in constructing an incubator that works perfectly, and in which the variation of temperature is entirely overcome.

I found it quite impossible in a Brindley incubator to keep the water always at the right temperature, and my own method is, to keep boiling water always circulating in the pipes, and to have the pipes moveable, so that I can withdraw them to any distance out of the incubating-boxes, so as to allow a difference in the quantity of piping used in winter and in summer. Further, my incubator is fitted with a glass steam-pipe, and a steam-dome for the collection and dispersion of the steam; and a small supply-cistern is attached to the boiler, by which the latter is always kept full, the height of the water in the supply-cistern being always shown in the glass tube. The water being always boiling, the heat never varies over the eggs, and the only watching required is occasionally to add some water to the supply-cistern.

I find that I have made my incubator very cheaply, and its practical working is very perfect.—A. H. S. W.

TRANSFORMATION OF COMB.

I am obliged to "A Devonshire Bee-keeper" for his reply to my question regarding brood remaining undeveloped (see page 60), and I may mention that I am not aware of any of the hives referred to having ever fallen a victim to foul brood. They commonly dwindled away till not a bee was left.

In reference to the transformation of drone comb into worker and *vice versâ*, I will give one instance of many, with a quotation from an esteemed correspondent and a first-class apiarian.

In 1866 there was a scarcity of drones in my apiary (Italians). I furnished a hive with comb, more than one-half being drone comb, for the purpose, if possible, of raising some drones, from a swarm that I tenanted therein. After hiving, the weather became very fine, and much honey was stored, the combs being completely filled, so that not a single drone was hatched. I was somewhat sanguine that the subsequent spring would find this stock with plenty of drones, and more so when I observed drones in it so early as January; but, to my mortification, as the spring advanced not a single drone appeared. Swarming time arrived, and very few drones appeared. When I examined the hive the whole of the drone comb had disappeared, and there was worker comb in its place. Evidently enough it had been transformed. The following is an extract from the letter to which I have allnded:—

"I may mention that in experimenting with bees I think it highly essential to imitate nature as nearly as one can in every point, and I do think you were ahead of the reason in attempting queen-rearing so early. I will just state one instance which occurred in my own apiary two weeks ago. Being anxious to start queen-rearing as early as I saw drone eggs laid, I procured some fine drone comb from ——; I fitted it into a hive where my best queen was, and on inspecting it ten days afterwards I was mortified to find it transformed into worker comb, and eggs laid in every cell."

If apiarians who have had experience on this subject would state their evidence they would oblige—A Lanarkshire Bee-keeper.

[I trust my Lanarkshire friend will not esteem me too exacting if I confess that I have still some doubts as to the disposition of bees to transform drone into worker comb, and *vice versâ*. I do not for one moment question the accuracy of the incidents which he relates, but I am inclined to believe that he is mistaken in considering that the inserted combs were destroyed only *because* they were drone combs, and that if worker combs of the same character as to age, &c., had been inserted, they would have met the same fate in being destroyed and rebuilt, although in this case no transformation would have taken place. I have witnessed more than one instance in which bees have in the spring absolutely refused to accept strange worker combs, although in first-rate condition, but have at once set to work to either wholly or partially destroy and rebuild them. I once removed the queen from a stock which had partially destroyed a worker comb, and the result was a most curious piece of mosaic or patchwork, all the vacancies existing at the time being filled with drone cells. This is, of course, an instance in which worker was transformed into drone comb, but it can scarcely be said to have been intentional on the part of the bees, which if left to themselves would simply have replaced the old worker cells by new ones, the transformation which was effected being entirely attributable to the removal of the queen before the renewals were completed.—A Devonshire Bee-keeper.]

REMOVING OLD COMBS, &c.

In the autumn of 1865 I purchased four stocks of bees at a sale. One of them was in a Nutt's collateral hive, though not so complete in its construction as described in Neighbour's "Apiary;" the other three were in common hives, two of them pierced at top for glass supers, and one not. The stock in Nutt's hive had been there at least two seasons before it came into my possession, the middle box alone being occupied, although communication with the two outside boxes was left free by the former owner, either from design or his not being properly acquainted with their management. Last summer, after swarming, the bees filled one of the side boxes. I also placed a glass super over the middle box, but without effect. Late in the autumn I removed the glass and closed the aperture. At the present time the stock appears strong, occupying the side box filled last summer. The combs in the central box are black and empty. Ought they not to be removed? and would it not be advisable to do so before the bees commence active operations?

From the other three stocks I obtained strong swarms, which were placed in new hives. After swarming, the stock in the old hive not pierced for a super, appeared to grow weaker, but not having had any experience in the manipulation of bees, I allowed them to remain, and they have since died out. The other two were removed into the bee-house; one of them hived in the summer previous to my purchase is strong and the hive sound, and I propose leaving it another season to obtain a swarm. The other is much older, the hive is injured by exposure, and the stock not strong. It is desirable to remove the bees into a new hive. Can I effect this by simply opening the aperture at the top and placing the hive over it, taking care to prevent egress between the hives? Is it likely the bees would occupy the new hive of their own accord, or

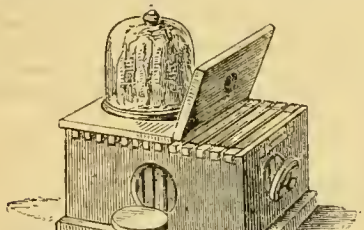
must I have recourse to the process called driving, which I fear I am not skilful enough to accomplish?—Adolphus H. Kent.

[If the combs in the "pavilion" are very old, it may be better to remove them, and in that case it should be done before it is re-occupied by the bees. It is, however, quite contrary to rule to permit a side-box to become the stock-box; and if the combs in the centre compartment are not more than two years old, we should suspect some error in management. It may possibly have resulted merely from an entrance in the side-box being left open until the bees had come to use it as the main doorway, in which case the seat of breeding would most naturally become established in close proximity to it. The stock in the common hive had, doubtless, become queenless, a not-uncommon accident after swarming, but one that is apt to escape observation in common hives until the colony has become nearly extinct. You had better permit the stock in the decaying hive to swarm, and three weeks after the issue of the first swarm, when all the brood will have been hatched, drive out the remaining bees and add them to some other colony. The plan which you propose would not answer.]

PETTITT'S NEW MOVEABLE COMB-HIVES.

This hive has just been brought out by Mr. W. J. Pettitt, of Dover. It contains thirteen bar-frames on the seven-eighth-inch or Woodbury scale, and the top bar of each projects quite through the back and front of the hive, resting in the metallic bar-rest precisely similar to the "Sibert-in-the-Wold" plan. Each frame is 13⅛ by 8⅜ inches, the actual size of the combs, and the elongated top bar enables the bee-keeper to loosen the frames previous to the removal of the crown-board without thrusting the finger and thumb into the hive.

The thirteen frames can all be used at the same time if desired, or by means of a dividing-frame which fits into the place of any one of the bar-frames, the actual size of the hive can be contracted or enlarged at pleasure, and if placed in the ninth "rest," it then gives a complete stock-hive with eight bar-frames.



Pettitt's New Moveable Comb Hive.

A Bar-frame.

The crown-board is in two parts, as shown in the engraving, is connected by brass hinges, and separates immediately over the dividing-frame in the ninth rest. The remaining four frames can be used as a collateral-super, communication to which is given through the dividing-frame from the stock hive, over which a bell-glass or other super can be worked; while the smaller division of the hive can be operated upon by lifting a portion of the crown-board without opening the whole hive or in any way disturbing the glass super upon the top. Empty frames can be easily exchanged for newly-made combs. The bees generally commence working in the frame nearest the stock, consequently that frame will be the first to be removed from the hive. I advise the removal of this comb as soon as finished; then shift the three remaining frames, and put in the empty frame quite at the end of the hive; and this process can be repeated as long as the honey season continues.

The top bar of the frame in this hive is cut away, as shown in the engraving, allowing a three-eighth-inch space between it and the crown-board, giving room for the bees to travel over, except about 1 inch at each end, upon which the crown-board rests and holds the frames securely in their places. That portion of the crown-board which covers the four spare frames is provided with a ventilator exactly similar to that in the top of the supers in Pettitt's collateral hives.

This hive has the peculiar advantage of being worked both on the storifying and the collateral system, retaining at the same time all the advantages of the bar-frame arrangement.—Sudbury.

PRODUCTION OF CREAM.

Experiment has proved that if we take two equal quantities of milk, and place one in pans to the depth of 6 inches, and the other to the depth of only 2½ inches, the latter will yield from 7 to 8 per cent. more cream than the former. This is the case more particularly in cold and damp weather, and at this time the mistake is most commonly committed. The temperature of the surrounding air has also a great effect upon the time required for the rising of the cream; experiment has demonstrated that the process is more rapid in warm than in cold weather. With the thermometer at

80°,	all the cream will rise in	10	hours	55°,	all the cream will rise in	24	hours
77°	"	12	"	50°	"	36	"
68°	"	18	"	45°	"	43	"

Sprengel found that if milk was kept at a temperature as low as 37°, but little cream would rise in three weeks. In order to avoid the trouble of keeping the cream at the proper temperature, it is customary in some dairies to churn the whole milk. The advantages claimed by those who follow this plan may be briefly stated thus: The proper temperature can be readily obtained both in summer and winter; 5 per cent. more butter can be obtained from the same milk; the butter is not only of the same quality while fresh, but if properly managed will keep much better.—(*Germantown Telegraph.*)

OUR LETTER BOX.

Colours of Yellow Birchen Hen (*A Subscriber*).—The true yellow Birchen hen has yellow or daw eyes, and yellow legs like the cock. The general colour of the feathers is a yellowish grey, with a strong tinge of yellowish cream colour all over, the feathers being edged with black. Breast, a yellowish greyish cream colour, light rather than dark; some of the margins of the feathers on the body are of a whitish cream colour also. Thighs as the breast. Tail blackish, a little marked with grey at the base. Comb and face red. Eggs of a yellowish tinge, and never white or pinkish. This is now a rare colour.—Newmarket.

Distinguishing the Age of Golden-pencilled Hamburghs (*Subscriber*).—We are so satisfied that there are no rules to guide us in distinguishing the age of fowls after they have passed the first year, that we do not attempt to name any. A very old hen can be distinguished from one that is only eighteen months old; but there are no means of distinguishing between those eighteen months and three years old. Some people talk of the scales of the legs and the wrinkled careworn faces, also the coarse wrinkled skins. All these exist, but they belong to no particular age. Even those who live by poultry live and dead are frequently deceived.

Perches for Fowls (*M. L. A.*).—Perches should not be more than 30 inches from the ground; they are as effectual, so far as the comfort of the bird is concerned, as if they were 20 feet high. A fir pole 14 inches in circumference, and split in the middle, is the best material, and the round side should be uppermost.

Proportion of Ducks to One Drake (*Idem*).—Four Ducks are enough for a drake, though some put more. There is no method of making a hen sit.

Cochin-Chinas not Laying (*F. S.*).—We can assign no cause for your disappointment. Cochin-Chinas are unquestionably good layers, and as for their sitting properties, if we were to allow the poultry world to deposit their greatest grievance in a heap made up of all, we should find in two months' time nearly all the Cochin fanciers throwing down broody hens; retrospect and anticipation both show us three or four heaps of buff feathers thrust into a laying box, growling when touched, and resisting everything short of actual violence to remove them. If the eggs were unproductive, it was caused by the fact that the cock did not attend to them. This is not so uncommon as it is sometimes supposed to be. You have been very unfortunate, but there is no rule to explain your failure.

Saccharine Food for Poultry (*Locust Beans*).—We have never tried saccharine matters as poultry food, and we should not like to. We have always found the most satisfactory food to be barley and oatmeal. We are driven to Indian corn because we are infested or benefited by myriads of small birds, and, while we find them in corn, our neighbours have the benefit of their useful labours. We are, nevertheless, sure that Indian corn is not so good as either barley or oatmeal. The best food there is is the oatmeal used in Sussex. It is made of the whole corn, ground so fine that it mixes as well as flour; nothing whatever is taken from it, no husk, bran, or anything else. We believe it is only to be had in Sussex.

Bee Gloves (*G. J., Birmingham*).—Indian-rubber gloves such as are used by photographers are the best for apiarian purposes. They are sold at most indian-rubber warehouses at, we believe, 5*s.* to 6*s.* per pair.

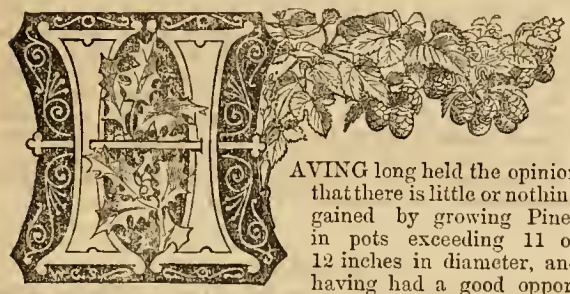
Gold Fish in an Aquarium (*Abbots Wood*).—Gold fish do best in soft water. If the tank is large, and there is plenty of vegetation in good order, the water is best seldom changed, but filled up as it evaporates. Watercress is not good—it will not live. The pond weed Anacharis alsinastrum, Valisneria spiralis, and Ranunculus aquatilis are good for the purpose; and to keep the glass clear from the confervæ, put half a dozen flat water snails in, Planorbis corneus. The fish do not require much food; give them small worms, they being the best, and occasionally a little bread and boiled rice, its grains kept separate, but not in sufficient quantity to lie at the bottom of the tank. Let some drift sand be in the aquarium.

WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 7—13, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
7	Th	Meeting of Linnean Society, 8 P.M.	49.5	32.6	41.0	16	35 af 6	48 af 5	4 7	19 af 7	1	11 18	66
8	F		49.5	31.7	40.6	16	33 6	49 5	32 7	31 8	2	11 8	67
9	S	Royal Hort. Soc. Promenade, 3 P.M.	49.4	30.9	40.2	11	31 6	51 5	0 8	44 9	3	10 48	68
10	Sun	1 SUNDAY IN LENT.	49.8	31.7	40.7	16	28 6	53 5	32 8	58 10	4	10 38	69
11	M	Meeting of Royal Geographical	49.4	32.2	40.8	17	26 6	55 5	8 9	morn.	5	10 17	70
12	Tu	Society, 3.30 P.M.	50.6	32.1	41.4	19	24 6	56 5	50 9	10 0	6	10 1	71
13	W	Meeting of Microscopical Society, 8 P.M.	50.8	34.3	42.5	14	22 6	58 5	39 10	17 1	☽	9 45	72

From observations taken near London during the last forty years, the average day temperature of the week is 49.8°; and its night temperature 32.3°. The greatest heat was 67°, on the 12th, 1841; and the lowest cold 7°, on the 10th, 1847. The greatest fall of rain was 0.69 inch.

SMALL VERSUS LARGE POTS IN PINE APPLE CULTURE.



HAVING long held the opinion that there is little or nothing gained by growing Pines in pots exceeding 11 or 12 inches in diameter, and having had a good opportunity of testing the two systems in the production of the supply of Pines here during the winter of 1866–7, I have thought the result might interest some of the readers of THE JOURNAL OF HORTICULTURE.

In the spring of 1866 I found the plants intended for the winter supply in a more forward condition than usual, and than I wished them to be. I therefore, contrary to my usual practice, decided on shifting a portion of them into 16-inch pots, with the view of keeping the plants growing and, consequently, preventing them from starting till July. This was done on the 22nd of February, and the plants selected for the shift were the strongest and those having their pots the best filled with roots. The plants constituting the portion left unshifted were mostly in 11-inch pots and a few in 12-inch pots, and from these I would not have expected such large fruit under any circumstances as from those which were shifted into the large pots. The latter were in all respects the finest plants.

The fruit from the whole of these plants, forty-eight in number, were cut between the end of October, 1866, and the end of January, 1867, and to show the results I append the respective weights of twelve from 16-inch pots and twelve from 11 and 12-inch pots :—

16-inch Pots.	lbs.	oz	11 and 12-inch Pots.	lbs.	oz
Smooth-leaved Cayenne	9	6	Smooth-leaved Cayenne	9	2
,, ,,	9	1	,, ,,	8	12
,, ,,	8	9	,, ,,	8	11
Charlotte Rothschild ..	8	5	,, ,,	7	11
Smooth-leaved Cayenne	8	3	,, ,,	7	10
,, ,,	8	3	,, ,,	7	1
,, ,,	8	2	,, ,,	6	12
,, ,,	8	0	,, ,,	6	10
,, ,,	7	9	,, ,,	6	8
,, ,,	7	7	,, ,,	6	7
Charlotte Rothschild ..	7	5	,, ,,	6	7
Smooth-leaved Cayenne	7	4	,, ,,	6	6

At first sight it may appear to those not conversant with Pine-culture that something considerable was gained by shifting into the 16-inch pots, but it must be borne in mind that all the finest plants were selected for the largest pots—plants from which, whether they had been shifted or not, I would have looked for the finest fruit; so that in respect to the production of large fruit, I consider little, or indeed nothing, was gained by the shift. Of the other twenty-four fruit there were only eight under 6 lbs., and their respective weights did not tell, any more than the weights given, in favour of the large pots.—D. THOMSON, *Archerfield Gardens.*

PLANTING PEAR TREES.

QUINCE AND PEAR STOCKS.

THANKING "C. C. E." for his friendly, able, and timely remarks on the above subject at page 85, I, as one of the parties interested, beg to give an answer to his question, "What is to be done?"

I, like "C. C. E.," have had trees of the Pear on the Quince stock from a first-class nursery worked 6 or 8 inches above the roots. Only last March, and again in November last, we had a number of trees, some worked 2 inches, and others between that and 10 inches, above the roots, whilst a few had been worked so low that the junction of the stock and scion had been covered with soil, evidently at the time of performing the operation of grafting; these had not rooted from the graft. The trees are five or six years old. Now, I planted all so that the fibres were covered with 3 inches of soil irrespective of the height at which the trees had been worked, and immediately after planting gave each a mulching of well-rotted cowdung 2 or 3 inches thick all round the stem to a distance of 2 feet from it. This is what I did last year and in previous years, and what I recommended Vol. XI., page 460.

"C. C. E." asks—1st, "The limit of distance between the graft and roots." I would prefer the trees worked as near the ground as practicable, and not exceeding 3 inches above the roots. The trees would then be eligible for all soils and situations; the junction could be covered, which I recommend to be done on all but heavy wet soils (for on shallow, dry, light soils the rooting from the graft or Pear is an advantage rather than a disadvantage), or the junction could be left uncovered, soil being placed to within the least possible distance of the junction of the stock and graft, which is desirable, as the certain rooting of the Pear would tend to wood growth, and on such heavy wet soils the good offices of the Quince in causing a dwarfer growth, fertility, and an earlier ripening of the crop, are destroyed.

2nd, "Should trees grafted 6 or 8 inches or more above the roots be rejected?" Yes, if those not worked more than 3 inches above the roots are procurable; but if such cannot be had, and only those that have been worked 6 or 8 inches or more above the ground are to be obtained, my answer is, No. Plant them so that the roots will be covered 3 inches with soil.

3rd, "Should trees grafted on the Quince stock 6 or 8 inches above the roots have these buried, or should the tree be planted up to the junction of the stock and graft?" Well, no; the roots should not in any case be covered more deeply than 3 inches. When these are deeply covered the shoots are long, sappy, and generally badly matured; but when near the surface the probability is the wood will be short and well ripened.

4th, "If the roots are not to be buried, is the stock to be hidebound?" No. Soil should be piled up against the stem so as to entirely cover the exposed portion of the

stock; this should be done in spring after planting, and the base of the cone need not extend farther from the stem than the height of the cone. The roots are not in that case buried, the stem is not hidebound, and roots are emitted from the covered portion of the stem. An annual addition of rich soil or manure all around causes an extension of the cone, and the roots from the stem are near the surface, whilst the original roots are not buried, for their annual extension carries them farther from the stem, their fibres being all the while covered no deeper than if the stem were uncovered. Trees treated in this manner bear as well as those which have been worked nearer the ground, and they have two sets of roots, neither of them in their most important parts buried too deeply; in fact, the trees have roots nearer the surface than those having one set of roots only. I do not, however, recommend such trees; for in lifting, the original roots, from their greater distance from the stem, have their fibres cut off, and the parts are too deeply covered to form fibrous roots: hence the inutility of the original roots, and though they may emit new fibres, these must inevitably be destroyed at every lifting of the trees. Such trees should always be planted high.

As to "C. C. E.'s" other questions, "Whether Pears on their own roots, and Apples on the Crab, are not better than on the Quince and Paradise stocks," I think there can be no two opinions on the subject, the choice being solely determined by the size the trees are to attain and the soil they are to grow in, as "C. C. E." remarks, but he should add, also by the culture they are to receive. I will now state my opinion on these subjects so far as my experience warrants.

With regard to the Quince as a stock for the Pear. 1st, The disposition of its roots is more shallow: hence it is better adapted for thin soils, also for planting where the subsoil is of an unfavourable character, such as a wet, undrained, stiff clay, impregnated with iron. On shallow soils the Quince, having its roots near the surface, can be fed by rich top-dressings, and, as its roots do not descend into the subsoil, the trees do not die of canker as when the Pear stock is employed where the subsoil is calculated to produce that evil. In thin soils, however, the Pear on the Quince should be planted on a raised mound, which secures roots near the surface, and any loss of moisture and coolness can be counterbalanced by rich surface-dressings, copious supplies of water, and liquid manure occasionally in dry weather. Further, the shallow disposition of the Quince roots is in its favour where the situation and soil are low and wet, because Pear trees in such soil root deeply, and abundance of wood is produced; but the prospect of a crop is small, and if canker do not commence the trunk and branches of the tree are plentifully covered with moss. The Quince on such soils is quite at home, requiring only to be planted on a mound or hillock twice as high as where the soil is shallow—that is, in a wet soil the tree should be planted on a mound twice the height of the roots, measuring from the uppermost fibres to the base, which distance on an average I find to be 9 inches: hence the mound should be from 1 foot to 15 inches above the ground level, whilst on shallow soils the trees may be placed on the ground, and the roots covered with soil.

2nd, The tree is more dwarf in growth. This is an incalculable advantage. An amateur with but a few square yards of open ground can have his Pear trees. They do not grow so vigorously as to smother everything else, and though small and occupying but little space, he has not to wait years for the fruit; whilst if he were to plant trees on the Pear stock he would probably have no more than room for one tree, growing well, no doubt, but years must elapse before it can furnish an abundance of fruit, and that coming in all at one time. On the Quince the trees fruit in a year or two at most, and as they occupy less space, several varieties may be grown so as to afford a successional supply.

3rd, The Quince will grow and thrive where the Pear will not. In a cold wet situation Pears on the Quince will ripen fruit when those on the Pear stock will scarcely ever do so. This result arises from the roots of the Quince tree being nearer the surface, and consequently in a warmer medium; moreover, the Quince is of earlier growth than the Pear. There is no soil in which the Quince will not thrive with careful culture. Heavy clays, it is true, are not congenial to it any more than to the Pear. On dry, sandy soil it soon cankers the trees upon it, unless liberal top-dressings and plentiful supplies of water and liquid manure are afforded; but it flourishes in a rich, rather light soil with a wet bottom, in which the Pear cannot be profitably grown.

4th, Trees upon the Quince come into bearing sooner than those on the Pear stock, and the fruit is larger and better ripened. Upon the Quince, Pear trees come into bearing in the first or second year after planting, and produce as many fruit annually, in proportion to their size, as a full-sized tree, and they are capable of bearing one to two pecks of fruit by the time trees on the Pear stock come into bearing; besides, the fruit is seldom if ever so fine from trees on the Pear stock as from those on the Quince in the open ground. The increase in the size and colour of fruit grown on the Quince is due to the returning sap receiving a check when it reaches the Quince; indeed, the effect of the latter is similar to that of ringing.—G. Abbey.

(To be continued.)

POTATOES FOR THE FAR NORTH.

"Monticola" has "a farm of five hundred acres, on a light, dry soil, in a cold county in the north, and finds his Potato crop has been deteriorating for many years, because he believes the seed has never been changed," and he is quite right in the supposition.

This garden is between two and three hundred years old; it has certainly been chiefly cultivated with Potatoes by me upwards of twenty years, and last season the crop grown in it was as good in quantity, and I may say better in quality than ever. Two of the sorts—viz., the old Walnut-leaved Kidney, and the old Fortyfold (second early), I have grown on the same spot during the whole of the time; but, then, I never fail to change my seed every year. The ground is a stiff, hearty loam, and I take care to procure my seed from light soil, or one of as opposite a nature as possible, from a place as near as convenient, but not always from the same field, and twice during the twenty years I have had quite fresh stock of the above two kinds, once from Suffolk, and once from Devonshire. By so doing there is no limit to the time that Potatoes may be grown good and profitably on the same ground, provided it is properly dug, hastard-trenched, or subsoil-ploughed often, and kept in good heart.

The sorts I recommended in my "Gossip" of February 14th, for field culture, &c., are good for cultivation on almost any soil. I procured them, or have had them presented to me, with many other sorts, at different times, from all parts of England. I selected the kinds there described, as being what I consider, after trying them by growth and palate, of superior excellence to the general run. I did not intend it to be inferred by my so doing, that so many sorts must necessarily be cultivated by each individual, but merely as an index pointing out the way for others who might be in need of information or guidance, on the presumption that one or more of the sorts might be known, or intelligence gained of them, in different neighbourhoods.

"Monticola" wants but one good market sort, and he turned to the printed list of a contemporary, where he found to his surprise only one sort that I recommended, the York Regent, quoted there, along with Flukes and Regents from various Scotch counties. I do not by any means consider the York Regent a Potato of the first quality, but I recommend it as being a popular market sort, which can be grown anywhere, and is easy to be procured. There are many kinds of Flukes sold which are simply bad. I happen to have kept the old variety by me for many years. Walker's Scotch Regent, and Sutton's Finest Regent, are very good, far superior to the old York Regent; but the Gryffe Castle Seedling stands at the head of all the Regents. I should think "Monticola" can easily procure this sort. It was sent to me about five years ago from Scotland, along with some other famous Scotch Potatoes, in a Stewarton bar-and frame bee hive, by an unknown friend, "a brother bee-keeper." It is stated at page 423, No. 297, to have been grown at Gryffe Castle, Renfrewshire, last season, at the rate of "223 bags, weighing nett 22 tons 5½ cwts. per acre, quality first-rate, flavour excellent, causing quite a run for seed in the spring." That is the Potato for "Monticola." As a summer sort I would advise a trial of Daintree's Seedling Round; it is a kind scarcely to be distinguished from the Dalmahoy in appearance, and whilst growing, but it is superior in flavour, looks better at table, and takes less time to cook. Then he could send a first-class Potato into the market "all the year round"—viz., Daintree's, followed by the Gryffe Castle.

"Monticola" also requests me to "name the best Potato for the Hebridean cotter." Without a moment's hesitation, I say the Freebearer of the east, *alias* Grammar of the north,

alias Late Fortyfold of the south and west, *alias* Red Breadfruit of the midland counties. It is also sometimes called "Rough Red" in the north, but do not let the old Scotch Rough Red be mistaken for it; the latter is red all over, and ugly, too, but the Freebearer is uglier still, having very deep eyes, and it is of a mottled purplish red and white. The flesh is quite white, of excellent flavour, and it is of a rare quality for "laying on" the flesh of pigs, and bringing down the scales. Whether the land be wet or dry, it is one of the very best Potatoes for the cottager, particularly where the ground is manured with "seaware," or vraic. I have helped to collect it for the purpose in Jersey for many a long hour.—Upwards and Onwards.

RENOVATING OLD WALNUTS—VENTILATING VINERY.

I am desirous to make known a discovery I have made—that Walnuts, after being kept for two or three years, and until so dried up that you would suppose you were handling empty shells, are restored to a perfect state by steeping them in water for a couple of days, and allowing them to remain one or two days longer out of the water before using them. Foreign Walnuts, which have a thicker shell, require longer immersion, say about three days. I have some of the latter at the present time that I prepare as a dainty for my canaries, and such look and feel as well, and are, I think, as well-flavoured as the first hour they were gathered. If you think it worth while to publish this in your Journal I shall feel that I may have suggested an agreeable after-dinner occupation to a considerable extent.

I have been greatly interested for some time past in the many and various articles in your very interesting Journal on the subject of the Vine; it is, in my opinion, a subject that never wearies. I am myself a little of an experimentalist. I began to use lime rubbish and oyster-shells in the composition of my Vine borders many years ago, and in addition to this I add a considerable quantity of charcoal, a substance which is beginning to be appreciated by the gardening world, but I think it is not so extensively used as it deserves to be.

My vinery is constructed after a plan of my own; the roof and about two-thirds of the front being glass, with about 1 foot of galvanised wire netting next the ground in front, which supplies a constant ventilation, and my Grapes are often pronounced better than most hothouse Grapes. I have not yet had any artificial heat, but this year I intend to have Hays's patent stove to give a few weeks of warmth in the early part of spring, and I am all anxiety in case of a sunless summer.—T. M. Robson, *Penally*.

TREES NOT INJURED BY GAME.

For "E. F. G.'s" information, I am sorry to say that very few trees and shrubs are not liable to such injury.

I happen to be in one of those places where game is reared on a large scale; I should think last year there were 1500 rabbits on about one hundred acres, and hares and pheasants in proportion. The only trees and shrubs which I do not remember the game to have injured, are the Beech and Birch, Alder, Black Thorn, common Thorns, Elms, Willows, Deciduous Berberis, Dogwood, common Laurel, Portugal Laurel, Rhododendrons, Ribes, Snowberry, Sweet Briar, Wild Raspberry, Yew, and Gueldres Rose.

The following may, however, be planted with safety, if care be taken in very severe weather to paint the stems with cowdung, soot, and clay, or to bind some Gorse round them. Some trees and shrubs, however, are so bushy that it is impossible to get at their stems without damaging the branches; but those which I shall now name I have never found injured by game, except in very severe weather, when a little extra feeding for a short time with Swedes for rabbits and hares, will often prevent damage. These are—Acacia, Ash, Aralias, Evergreen Berberis, Cercis or Judas Tree, Cherries, Horse Chestnut, Hornbeam, Maple, Oak, Poplar, Prunus, Rhus, Ribes, Spiræas, Sycamore, Syringas, Viburnums, Walnuts, Weigelas, Andromedas, Abies, Aucubas, Box, Cedars, Holly, and Loniceras. Perhaps there are a few more which I have omitted; I only write from experience.—T. Elcome, *Rhug Gardens*.

Chimonanthus grandiflorus.—I was not aware of any special merit due to a propagator for obtaining the above from cuttings; for several years ago I had cuttings put in in two successive years, and nearly every cutting rooted and made a plant in the following year. The cuttings were put in about the same time as those you mention, and were of the current year's wood, but taken from the tree with a small shoulder of old wood.—T.

FLOWERS AND THEIR ASSOCIATIONS.

There is a common saying, "Call a Rose by whatever name you will, it is still a Rose;" and when we have expended all our enthusiasm flowers are but flowers, the frailest, yet the most beautiful things earth holds in her keeping. Dear they are to most, if not to all of us. Few have the courage to acknowledge insensibility to their transient charms. Some may live away from their influence in the centre of a large town, where flowers grow not, where they are seldom seen; but this very rarity gives to their beauty a power which is often dimmed by constant sight and usage. And then, too, their power, beauty, and influence vary to each of us. Time, circumstances, and associations give a deeper, sometimes a very painful interest to individual plants and flowers, connecting them indissolubly with the events of our passing years, with our joys and sorrows, with our heavy losses, with our long weary hours of work, with our longer and more weary hours of waiting, with our misunderstandings and separations, which fret the spirit, and leave life-long heart-burnings; with our hasty outspoken words of anger, which fill us with gnawing regret; with days of sickness, of painful suffering when the hands lie useless, and the aching head feels like Tennyson's "Deserted House," empty quite, for thought is not—cannot be; and with that deeper misery, that misery which is so hard to bear—the sense of utter failure, and cold neglect, and unforgiven faults.

Yes, full of associations to some one or other are most of the every-day common flowers. Some minds may feel less of this than others, but all in some measure. That field of Buttercups and Daisies burning beneath the June sun—a marvel of beauty, making the costly garden within the park gates pale in comparison, and seeming like very cloth of gold set with silver stars—brings back to the mind fields of long ago, where truant children, caring nothing for torn or soiled clothes, wandered, climbing over gates and walls to gather the forbidden flowers, and wishing the days were weeks long, and wondering, like the little school boy wading knee deep in Wood Anemones, if heaven would be half as lovely.

Those little Speedwells, how dear they are to us yet! and how beautiful they were growing in the soft grass of that home meadow, a long broad patch of blue—intensely blue—a bit of the summer sky come down to dwell upon the earth, never to be seen in after-years without a yearning desire for the home, the hedge, and the meadow.

Those deep pink Cabbage Roses which we stood watering one July evening in the near-to-town garden, watering with much noise and mirth, when the tidings of a great grief reached us, never looked the same after; the spirit of unconscious beauty seemed driven away, and you might have thought sorrow had entered in, for they hung down their heads as if weary of their own weight; and though we cared for them and grew them afterwards, we never loved them, and never could entirely separate them from the trouble of that summer evening.

And the Heliotrope—I never see it or catch a passing breath of it, but I think of one Heliotrope before which the thought of all other Heliotropes fades away—an old plant sending out its perfume into a dingy parlour, where a mother, growing old faster than her plant, sat watching and waiting for her son's return. Oh, the bursts of passionate grief and anger! The poisoned words come back to memory ever with the Heliotrope—cannot be parted from it—leave ever a sense of pain which even its sweet fragrance cannot banish.

"Maud, dear, do not give Polly those Wallflowers, I cannot endure the smell of them," said a young mother to me. "They remind me so of poor Edith, though she has been buried more than fifteen years; she died early in the spring, and we could get nothing but Wallflowers to put into her coffin. I have never liked them since; I know it is foolish—mother says it is wicked—but I cannot help it. I cannot bear them. I never go into the market during April or May for fear I should see them, or smell them. I cannot think whatever they do with the immense quantities of cut Wallflowers they bring in. If I had miles of garden I would not grow one; they make me live over again that dreadful time—fill me full of unpleasant memories." And yet when Mrs. Crompton

died her daughter went up and down trying to get a few sprigs of late Wallflowers. She had costly stove flowers offered by her friends; they would not do for her—she said her poor mother knew nothing about them, did not love them, and that flowers were almost worthless save for the thoughts and feelings they embodied.

"Those Orange Lilies remind me of the prairies of America," said one who had wandered up and down on the face of the earth. "I never see them but I go back to that old time when, travelling in North America out among the wilds, we used to come suddenly upon them growing in the hollows, large patches of them one brilliant glow. Ours are pale in comparison; the stronger light, I suppose, brought out a deeper colour."

That little Oncidium flexuosum, standing out like an "In Memoriam," the gift of one—a brave, strong, yet ailing, delicate man—who thought for, worked for, and gave up his life for, the elder brother less brave, less strong, who lay down in the midnight darkness to sleep with miles of wood, and field, and lonely moor all around—lay down with his day's work unfinished, the hope of his life unfulfilled, and never woke up in this world to finish his work; and his hope we can but trust he will find in that other country where the hands are stronger, and the pains of the flesh hold not back the willing worker.

So it is, some flowers are much to us apart from their beauty and their fragrance; they are breathings-out of the life we have lived, reminders of the scenes through which we have passed, sharers of our mirth and revelry, quiet witnesses of our sad and solemn hours, untired tellers of the old story of our doings; and fresh and new with each season do they come back to us.

Again, we are digging away the snow in the old Abbey garden miles from home, to find the Snowdrops we knew were above the ground before the storm came, and we shiver at the east wind blowing keenly through us, and feel the deadly coldness of the but-half-alive flowers when found and gathered. We can see them with our eyes closed, and know very well all the Snowdrops in the world can never be to us what those poor far-fetched delicate spring flowers were.

Or we are seeking with untiring patience the dark Primroses from among the pale ones, growing on that Primrose bank at Gothorp Hall, that bank on which the sun loved to shine; and we can hear the murmur of the dear river Aire, that used to make sweet music for us; and we can feel the hushed stillness from the great Rommell's Moor tracking our steps, making a sort of presence which awed our childhood, causing us to pause, and listen, and wait. Ah me! there was no fear in those days, no jarring note in the hallelujah chorus of our lives, no thunder in the heavy rain clouds darkening all the villages around, no danger in the wind that whirled and tossed the leaves and straws high up above our heads, and rolled us over and over on our grassy play-ground. Now we never see those spring flowers in cottage gardens, or growing under the hedges, or in the market in the countrywomen's baskets or on the artist's canvas, but we think of those who were about us then, who never more will hear the murmur of the river or the deep breathings of the moor.

Or we are dragging and poking up with bits of rough sticks great yellow bulbs of the Turk's Cap Lily growing in a little garden of an empty house. How we pulled, and toiled, and overheated ourselves on that close August evening, and bore away in our fright only two roots. The house had an evil name—was, indeed, said to be haunted, so that we pulled, and poked, and worked in mortal terror of the ghosts inside, and in dread of some chance passer-by, for it was a roadside garden.

Or we are twisting and turning long sprays of Bindweed round our hats, and wondering why the big white flowers should persist in closing up so long before the day is done, and trying out-of-the-way means to keep them open, at last tossing them away to float down the stream like fairy gondolas. Now, in our wiser years, we never pluck them, but leave them to open out wide and full in adoration to the warm summer sun, the only thing they care for; when he moves westward or shades his splendour, even for an hour, they fade and die.

Or in our summer holidays we are again picking pale pink Convolvuluses out of the short stiff grass—real shore flowers we call them; but we never gather them without dreaming of a time when we lay resting on a warm hillside with those little flowers all about us; a sense of peace, and rest, and joy filling our hearts, loving friends with true and tender words making richer and fuller the cup of our lives, and the great waves like giant crystals beating up to Bridport Harbour—silent save for the fishermen's cries—the blue sky brooding softly over a sea as blue.

"I never can look at Primulas," said a dear cousin, "but I grieve for the fate of one that came to an untimely end—a finely-fringed white Chinese Primrose brought all the way from that far country by a captain friend—a splendid specimen. It was watered and tended so carefully, and flowered as never Primula flowered before for nine long months; then in my absence it was turned over in the darkness and left to die."

Then, too, those little Forget-me-nots—how full they are of many memories of wild-flower gatherings—in the Middleton woods, in the Adel valley on the banks of the Ouse, on York Common, in the Shipley glen, and in the Dorsetshire lanes; but clearer than all else stands out the thought of a Sunday evening ramble outside the town of Dorchester, beyond the long avenue of trees that mark its entrance so grandly. There we stood in the grass beneath the cool grey sky, for the day was nearly done, a group of girls gathering Forget-me-nots for each other to be kept safe and live till we should meet again, gathering them with low, soft, loving words mingled with kisses and gushes of laughter that would not be kept back. I can see again the summer day fading into the night, our dresses falling on the grass, blending with its greenness, and making but one colour; and I can hear the fall of our feet homewards, and the sighs with which we put away our treasures—prestige of the sorrow of a long, long parting. And when the living blue Forget-me-not comes to me (I never seek it now, or grow it, or care to go where it is), then I look at my grey dead ones, and feel a deep aching meaning in those words,

"Oh, for the touch of a hand . . . . and the sound of a voice."

Or we are dropping quiet, painless, nay, thankful tears, upon some fair white flowers, sister flowers to some we left upon a new grave—a grave dearer and sadder than we think any other can ever be to us; left in all their fresh beauty and sweet fragrance upon the dead flowers of other years, upon the grassy mound in that old churchyard, the rooks cawing in the dark Fir trees, the noise and smoke of the great town far away, and the warm soft August rain dropping down tears quieter even than our own upon our fair white Lilies. Dear and sacred are those Lilies unto us.

Yes, so it is. A flower may be but a frail flower, and yet it may be invested with a deeper meaning, made richer by the doings and feelings of a life. To many the pale Snowdrops are but the herald of spring, born out of the cold hard winter soil—promise of gayer flowers to follow. To others they are the world's resurrection flowers—not born, but risen from the dead—a thing of the past linked to the far future. And some flowers which we may regard with sorrowful eyes may be to others full of sunny memories, of pleasant associations: so that after all they are what we have made them, speaking to us in the language our own lives have taught them, but yet ever dear to us—dear in the long summer days of peace and joy—dearer still in the cold winter days of sorrow and loss, unless, indeed, we have suffered the noise of the great world to deafen us to their low sweet voices.—Maud.

VERBENA CULTURE.

I should like to recommend, side by side with the remarks made on the Verbena by Mr. Wills, a plan which I adopt for growing them after they are struck, and which, if not original, is not common. No doubt some one will start up and say, "I have practised it for many years!" and if any of your readers do so, I have no doubt the plan has never been abandoned by them. It is as follows:—

After the cuttings are struck, say at the end of March, a frame about 18 inches high at the back and a foot high in front is chosen; one that you can shut up perfectly close is the best. Inside the frame place 9 inches of good light soil, and in this plant the Verbenas from the cutting-pots, watering them well with tepid water to settle the soil. When the sun shines, every morning give about half an inch of air, no more, until ten o'clock, when the plants should be watered overhead, and shut up closely for the day. The thermometer will possibly rise above 100°; but you will see, if you try the system, what a black strong growth the plants will make in consequence. When you see a warm genial shower coming in April or May pull off your lights, and expose the plants to it, shutting them up

as soon as it is over, if it is after the time named above; keep them well stopped, and harden them off a fortnight before planting out.

Amaranthus and Perilla also do very well in this way, and so will Coleus I believe, although I have not tried it. The plan described saves much of the watering that would otherwise be necessary, and is the easiest I have fallen in with.

I confess I laughed outright when Mr. Wills told us not to water a plant after potting until the roots had reached the sides of the pots; but then I am—An Essex Calf.

HARDY FLOWERS IN JANUARY AND FEBRUARY.

Bitton, near Bristol.—I send my list of hardy plants in flower during the months of January and February, arranged according to your suggestion; and I hope to be able to forward you a similar list every month.—H. N. E.

JANUARY.

Jan. 1.	Helleborus niger	Jan. 1.	Wallflowers.
,,	niger major	,,	Gorse
,,	odorus (dumetorum)	,,	Cydonia japonica
,,	atrorubens	,,	Viburnum tinus
,,	olympicus	,,	Erica herbacea
,,	fœtidus	,,	Arabis præcox
,,	Daphne hybrida	,,	Eranthis hyemalis
,,	Neja gracilis	,,	Hepatica, white
,,	Chimonanthus fragrans	,,	Violets, Russian
,,	Daisies, single and double	Jan. 7.	Aubrietia deltoidea
,,	Potentilla alba	,,	Omphalodes verna
,,	Primrose, red	Jan. 23.	Leucojum vernum
,,	Azara dentata	,,	Cyclamen ibericum
,,	Veronica Andersoni	,,	ibericum album
,,	Jasminum nudiflorum	,,	Crocus Imperati
,,	Lonicera fragrantissima	Jan. 27.	Galanthus nivalis
,,	Tussilago fragrans	,,	Crocus mœsiacus
,,	Lamium maculatum	Jan. 29.	Cyclamen coum
,,	Garrya elliptica	,,	Crocus vernus

FEBRUARY.

Feb. 7.	Scilla sibirica	Feb. 20.	Double Snowdrop
,,	Hazel	,,	Crocus stristus
Feb. 10.	Helleborus orientalis	,,	concinnus
Feb. 14.	Scilla bifiora	,,	obesus
,,	Anemone pavonina	,,	Berberis Bealii
,,	Galanthus plicatus	Feb. 23.	Forsythia suspensa
,,	Hepatica, red, single and double	,,	Buxus sempervirens
,,	Hepatica, blue, single and double	,,	Arabis albida
,,	Crocus Sieberi	,,	Narcissus maximus
,,	Hyacinthus romanus	,,	pseudo-Narcissus
Feb. 17.	Ranunculus gramineus	,,	Primula denticulata
,,	Ficaria ranunculoides plena	,,	Sisyrinchium grandiflorum
,,	Ficaria ranunculoides alba	,,	Saxifraga oppositifolia
,,	Helleborus purpurascens	,,	Polygala chamæbuxus
,,	Erica conioides	,,	Petasites alba
,,	Crocus vernus	,,	Daphne mezereum
,,	sulphureus	,,	Ranunculus ficaria
,,	lagenæflorus	Feb. 26.	Hyacinthus orientalis
		,,	Forsythia viridissima
		,,	Saxifraga ciliaris

BATH.

Feb. 1.	Dandelion	Feb. 20.	Caltha palustris
2.	Daisy	20.	Coltsfoot
2.	Primroses	20.	Ground Ivy
8.	Hepatica	21.	Lungwort
13.	Celandine	24.	Large Periwinkle
14.	Wallflower	27.	Daffodil
16.	Pyrus japonica		

—S. B. C. V.

Middlesborough-on-Tees.—I send you the names of a few flowers that bloomed here during the past month.

The effects of the late winter are more apparent than they were a month ago. I find two specimens of Cedrus deodara of about ten years' growth very much injured, and a Cedar of Lebanon of about the same age quite browned. A Wellingtonia of the same age does not appear to have suffered in the least. Evergreen Oaks have suffered much; I am afraid we shall have to take some of them down. Photinia serrulata and Clethra alnifolia have succumbed. Plants in flower:—

Feb. 1.	Snowdrops	Feb. 12.	Siberian Rhododendron
,,	Single and double Violets	,,	Crocus
,,	Mezereon	Feb. 20.	Australian Wallflower
,,	Pansies	,,	White Arabis
Feb. 7.	Hepaticas	,,	Bearsfoot
,,	Spring Bulbocodium	Feb. 22.	Scilla sibirica
,,	Mediterranean Heath	,,	Berberis
,,	Omphalodes	,,	Yew
,,	Buttercups		

—M. H., *Acklam Hall.*

Haddington.—Plants in flower—Winter Aconite, Snowdrops, Primroses, Hepatica, and Polyanthus. All bulbous plants, long kept back, are now (February 11th), vigorously pushing through the ground.—John Ferme.

ROYAL HORTICULTURAL SOCIETY.

March 6th.

Floral Committee.—This meeting, although not equal to the last, was a very interesting one. The supply of Orchids, considering the inclement weather, was excellent; and many other interesting plants were exhibited. Among the plants brought before the Committee were some extraordinarily fine specimens of the Large-flowering Mignonette, exhibited by the Rev. G. Cheere, Papworth Hall, St. Ives. Six specimens were sent; a single plant in each 48-pot, actually a mass of bloom. The cultivation of this simple plant was the admiration not only of the ladies, who were delighted with its perfume, but we might almost say the envy of the nurserymen. The seeds, we understand, were sown last August, and no liquid manure was used, merely a little bone dust in the soil at the time of potting. The seeds were sown in pans, and the seedlings potted in thumb pots, and then transferred to the five-inch pots. A special certificate was awarded to Mr. Cheere, also the same award for some fine specimens of Anne Boleyn Pink. Messrs. Veitch & Sons, with their usual liberality, contributed largely to the exhibition. A first-class certificate was awarded to Lælia Pilcheri, one of Mr. Dominy's hybrids, an Orchid of much beauty, the dark rosy purple lip being very conspicuous. Special certificates were awarded for Cymbidium eburneum, Cœlogyne cristata, and for the general collection, in which were some very choice Orchids; also Achyranthes Verschaffelti aureo-reticulata, a new form of Iresine; Camellia Storyi, Trichopilia suavis, &c. Mr. Hodges, gardener to E. Wright, Esq., exhibited cut specimens of a new Lycaste, with singular dark brown side petals. Mr. Parks, gardener to G. Cooper, Esq., Old Kent Road, brought three beautiful specimens of Phalænopsis Schilleriana, distinct varieties, well grown, with unusually large flowers. A special certificate was awarded them, and the Committee recommended them to the Council for the Lindley medal, which recommendation was entered on the minutes of the day. Nothing but an ardent love of horticulture could have induced the owner of these plants to have exhibited them in such a cold day; we much fear the plants will suffer from the change of temperature. Mr. Bull also largely contributed to the exhibition from his select collection of plants. Among them a novelty in the stove plants, Dalechampia Roezliana rosea, attracted much attention. The small clusters of almost insignificant flowers are placed between two bright rosy bracts, which remain bright in colour for six weeks, and when the flowers have died away the bracts still give a cheerful appearance to the plant. At first sight it was a perfect puzzle to imagine what family it belonged to, and much surprise was expressed by the uninitiated to find it among the Euphorbiaceæ: a first-class certificate was awarded it. Among other specimens Mr. Bull sent a new fine-foliaged plant, Samyda nobilis; also some small specimens of Odontoglossum gloriosum and O. Alexandræ: a special certificate was awarded the collection. Messrs. E. G. Henderson sent small collections of their admirable Cyclamens and Primula sinensis; some of the double varieties of the latter were very pretty. A curious specimen of Cyclamen, producing red and white flowers from the same plant, excited some sensation. A special certificate was awarded the collections. Mr. G. Warren, gardener to T. J. Levett, Esq., sent a cut specimen of an old favourite, Epidendron mucrochilum. A collection of superb cut Orchids was sent by J. Bateman, Esq., which received a special certificate. A cut specimen of a most superb plant, Brownea grandiceps, was sent by Sir Hugh Williams, Bodelwyddan, Flintshire. This was perhaps the most striking specimen exhibited, as the plant has seldom been seen in flower. A special certificate was awarded. A collection of Orchids was sent from the Society's gardens, also cut specimens of Camellia reticulata. We much missed specimens of Camellias, and cannot understand why the cultivators of this beautiful and popular winter flower do not exhibit them.

Fruit Committee.—Prizes were offered on this occasion respectively for the best three dishes of Dessert and of Kitchen Apples, and were awarded to Mr. Whiting, The Deepdene, Dorking. His Dessert Apples were Adams's Pearmain, Mickleham Pearmain, and a kind unnamed, but which had some resemblance to Federal Pearmain; the Kitchen varieties were Alfriston, Devonshire Buckland, and a late kitchen Apple unnamed, but believed to be London Pippin. The whole of Mr. Whiting's fruit were well grown, and in excellent preservation. Mr. S. Ford, gardener to W. E. Hubbard, Esq., St. Leonard's Lodge, Horsham, sent three seedling Apples, which, however, were not considered of sufficient merit to deserve a certificate; and from Mr. George Lee, Clevedon, Bristol, came specimens of Apples produced on the same tree, but very different in appearance, one being a Russet, whilst the others (Orange Pearmain), had a smooth bright crimson skin. Respecting this singular fact some remarks were made by Mr. Berkeley at the meeting in the afternoon. Mr. Stanton, gardener to J. Bateman, Esq., Biddulph Grange, sent a dish of home-grown Oranges, also Lemons, one of which was very large; and Mr. Sherratt, gardener to the same gentleman, at Knypersley, bunches of Ahbee Grape, referred to in our report of the fortnightly meeting.

Mr. Wells, Holme Lacy Gardens, submitted what he believed to be a variety of Sea-kale, with yellow instead of purple tops to the leafstalks, but the Committee did not consider it distinct. From Mr. Earley, gardener to F. Pryor, Esq., Digswell, came Hamburgh Perennial Spinach, which proved to be only the old Patience Dock or Herb Patience.

Fortnightly Meeting.—Sir Philip De Malpas Grey Egerton, Bart., in the chair. After the election of thirteen new Fellows, and the admission into union of the Sorbie Parish Cottage Gardening Society, and Wotton-under-Edge Horticultural Society, the Rev. M. J. Berkeley offered remarks on some of the subjects exhibited.

Mr. Berkeley first remarked, that the plant with pretty white flowers shown at the last meeting by Mr. Earley, and which was said to produce red berries, proved to be Trichosanthes colubrina, and that, therefore, its bearing berries was a mistake. He then noticed Messrs. Henderson's Cyclamens which were deservedly much admired, and more particularly one which produced white and rose-coloured flowers, the former also very different from the latter in structure. Most of the varieties were said to be crosses between C. coum and C. persicum. The peculiar structure of the pretty Dalechampia, from Mr. Bull, was then noticed, and some remarks were made on the Herb Patience, which had been sent as Spinach, instead of which it is still used on the Continent, though now almost obsolete in English gardens. The remarkable flower of Brownea grandiceps, from the garden of Sir Hugh Williams next occupied attention, and Mr. Berkeley remarked that in a natural state the flowers are pendent. Dr. Lindley, who figured in the "Botanical Register," in 1841, a specimen flowered by Richard Harrison, Esq., of Liverpool, related a circumstance which he (Mr. Berkeley) did not think had since been verified. Dr. Lindley, writing of the blossoms, said, "They are produced in a short spike, tier above tier; every day witnessed the expansion of a new tier above those of the former days, till at last the whole mass became a globe of living and glowing crimson. This brilliant head appeared on the side of the main stem among the leaves, which at that time presented a singular phenomenon. Every evening they rose up and lifted themselves from the blossoms to expose them to the dew, so that each morning these beautiful objects were uncovered; but as day advanced the leaves gradually drooped, and bent down over the flowers to guard them from the rays of the sun." Mr. Berkeley added that he did not think this circumstance had been observed since, although the plant, which was related to the Amherstia nobilis and Jonesia asoca, had been flowered at Chatsworth, Glasnevin, and other places. The plant at Bodelwyddan was of considerable age, and the house in which it was grown had been raised twice or thrice to give it room. He might also mention that Lady Williams was the daughter of the Earl and Countess of Amherst, in honour of whom and of her mother the Amherstia had been named. Mr. Berkeley next referred to the Apples sent by Mr. Lee, of Clevedon, and which were produced on the same branch of a tree of Orange Pearmain. The branch was about 4 feet long, and the Russet-looking fruit was produced near its base. The circumstance of the two kinds of fruit being borne on the same branch called to mind a plant well known to most cultivators, Cytisus Adami, which is generally believed to have been produced by grafting Cytisus purpureus on the Laburnum, and, by some accident, one cell of the stock and one of the graft having each become divided and then united together, the result had been a plant partaking of the nature of both. It would be very interesting to know what stock Mr. Lee's Orange Pearmain was grafted on, and whether this was another case similar to Cytisus Adami. Passing to another subject, Mr. Berkeley said he had received a letter from Mr. Arthur Trollope on raising seedless Grapes, and suggesting crossing varieties which have no seeds, such as the Sultana and Black Monukka, with the view of obtaining an early seedless race of high flavour; but Mr. Berkeley said he could not recommend the Sultana, as the berries were too far apart, but if a seedless Hamburgh could be produced it would be a great acquisition. Mr. Trollope also drew attention to another curious matter—namely, that if such Grapes could be produced the vital energy of the Vine would be employed in producing pulp instead of being diverted to the formation of seeds, and hence that finer fruit would be the result. [Some remarks on this subject will be found at page 385 of our last Volume.]

Major R. Trevor Clarke said that Mr. Berkeley's remarks on that curious, paradoxical plant, Cytisus Adami, had recalled to his recollection the fact that he had a plant of it many years ago, which not only produced seeds from the flowers of the yellow Laburnum and Purple Cytisus, but from the intermediate form as well. In those seasons in which the latter perfected seeds he noticed that the flower-stalks were persistent, remaining green during the winter, and from every place from which a flower had fallen a small shoot was produced, which in every case was that of the Purple Cytisus. At the last Tuesday meeting, said Major Clarke, he had occasion to mention the hardy nature of Pyckia rariflora, a plant belonging to a family, perhaps one of the last we should look to for such a tendency, the Bromeliads being tropical or semi-tropical plants, but it was undoubtedly hardy in a warm place. He now produced another member of the same class which had stood one winter covered only with a handful of moss, and more than this, it flowered strongly in the succeeding summer. In the spring following the next or second winter, the main stem or crown was found to have perished, but a small sucker remained alive, and did in fact grow on healthily till destroyed by accident. He was not quite certain of the name of the plant, but he thought it belonged to the section of Bromeliads called Puya. Another of them, and a very fine one, P. Altensteinii, grew freely with him in the open air during the summer. Then he had another, quite a little pet, but he was not sure of the hardiness of this member of the family; and he next produced another specimen of the same plant which had been wintered in the greenhouse, and which was consequently dormant, but it would flower by-and-by in the warm summer time even in the greenhouse or conservatory. Two other Bromeliads, Bilbergia purpurea and an old zebra-striped plant of which he had forgotten the name, served to make up a little collection of interesting tropical plants grown in common moss—three of them at least greenhouse plants as to habit, two hardy under careful treatment, and all thriving in glass cases kept in a sitting-room. He had also brought with him a cut spike of an old African plant, Antholyza præalta, a most picturesque plant, but rarely seen in flower. Unfortunately its habit of beginning to grow at the end of the year and producing its blossoms in early spring, added to a total inability to stand a few degrees of frost, will always be against its cultivation in the open air, except in the south of England or in very favourable spots near the seaside. He well remembered the fine effect of some patches of it in the garden of the Chiaya, at Naples, on one fine February sunset. The next morning every plant was killed by frost. He mentioned this because every now and then the Antholyzas cropped out in the catalogues as plants cultivable out of doors.

Mr. Bateman said he was indebted to the Society for the opportunity of presenting to them a Grape introduced from the Deccan by Colonel Sykes, and called Ahbee, and it was well deserving of attention on account of its property of keeping so late in the season. It was now March, and though there were a few Grapes such as Lady Downe's and Barbarossa that would keep till then, still he did not know a better Grape than Ahbee at the present season, as it was still exceedingly juicy. Though certainly not equal to Mr. Kelk's Muscats exhibited two years ago, in fact, nothing to compare with them in flavour, it was really a most desirable variety to grow on account of its late keeping; besides which, it had another merit in its colour being so very lovely. Till he had seen this Grape he had never believed in the tints of the old Dutch pictures; but of what beautiful tints there were in the vegetable kingdom there was abundant proof around, and the only question was, Could these tints be copied?—and to that question he found an answer in a book (Knoop's "Pomologia"), in which though now more than a hundred years old, the colours were as fresh as when they came from the studio of the artist. For the opportunity of seeing this book they had to thank Mr. Bohn, who had found it out and given it to Dr. Hogg.

Among Orchids, remarked Mr. Bateman, there was a flower-spike of the white variety of Epidendrum macrochilum which had been grown in a Pine-stove by Mr. Warren, gardener to T. J. Levett, Esq., Wichnor Park, Burton-on-Trent. Every one knew that Orchids generally could not be grown successfully in Pine-stoves, as such structures are too warm and dry; still there were some salamanders, and the Epidendrum in question, coming from the hot climate of Caraccas, was one of them. Among novelties, with the exception of a new Lycaste from Mr. Wright, of Gravelly Hill, Birmingham, and Lælia Pilcheri, one of Mr. Dominy's hybrids, there was not much. He might remark of Dendrobium luteolum, from his own garden, that it was only beginning to fight its way into notice, and that next year he hoped to be able to exhibit it with a dozen spikes in a pot. Mr. Bull's Cypripediums were then referred to, and nothing, Mr. Bateman said, would please him better than to see ten or twenty species shown at the same time, for there were as many as a score of species already in this country. Of Odontoglossum Alexandræ, of which two or three small plants came from Mr. Bull, it was remarked that it is one of the easiest of Orchids to flower. Cœlogyne cristata from Messrs. Veitch was a most meritorious example of good cultivation, being quite a cascade of flowers. It was one of those Orchids which he termed bridal Orchids, and in cultivation required to be kept cool to flower well. Another beautiful Orchid of the same class and requiring similar treatment was Cymbidium eburneum, which had the merit of continuing a long time in flower. Messrs. Veitch had also a remarkable spike of the golden-flowered Dendrobium Farmeri, and one or two good Cattleyas—among them Cattleya Trianæi, a name which, as stated at the previous meeting, could not be retained. One other of Messrs. Veitch's plants was the lovely and sweet-scented Trichopilia suavis, to which a painful association was attached, for it had been sent to this country by Von Warscewiez, to whom we are also indebted for Trichopilia coccinea and other Orchids. After remarking on the news of Warscewicz's death following so soon after the loss of Mr. Skinner having become known, Mr. Bateman said that although Warscewicz had travelled over a great portion of New Grenada, Quito, and Peru, he had not left us more than half a dozen plants; not because he was not indefatigable, but owing to our ignorance of how to treat those which he sent home, most of which required a cooler treatment than that which had been afforded them, and they consequently perished. There was one other plant which must be mentioned, the lovely Phalænopsis Schilleriana, exhibited by Mr. Cooper, after whom had been named at the last meeting Epidendrum Cooperianum. Though he (Mr. Bateman), had seen as good plants, he had never seen the flowers of that Phalænopsis so large and so beautiful.

The next subject to which he had to allude was Mr. Hullett's "New Food." He had heard from Mr. Hullett, who thought it rather cruel of Mr. Bateman to say what he did at the last meeting, leading people to suppose that the seed he (Mr. Hullett) sent out was only Holcus saccharatus. He sent the black seed to no one except to show the difference between it and the true thing (Sorghum tartaricum), which has white seed, and this he sent to over ten thousand applicants; the residue had a variety with brown seed, which is even hardier than the white, and both were grown by him at Waterloo last year, and both were perfectly hardy, which the other (with black seed) was not. "So much for Mr. Hullett's statement," said Mr. Bateman; "now for my defence. In the only two collections (those sent to the Royal Horticultural Society and to myself) in which all the three varieties (white, brown, and black) were included, not a hint was given which was the true Simon Pure. I was, therefore, obliged to find that out for myself, and my only chance was to go to the seed-shops; and at half a dozen around Covent Garden I asked for the Chinese Sugar Grass, and in every case a packet of the black seed was handed to me." Mr. Bateman therefore concluded that the black seed was the right sort, instead of which the white or the brown ought to have been selected. So much for the colour question, now for the question of names. As Mr. Hullett spoke in his letter to the *Times* of the "Chinese Sugar Grass," after which in brackets followed the words Sorghum tartaricum, it was natural to infer, according to botanical usage, that the Chinese Sugar Grass was Sorghum tartaricum and Sorghum tartaricum the Chinese Sugar Grass; but the Chinese Sugar Grass, as such had always been understood in this country, Mr. Hullett's S. tartaricum certainly was not. What, then, was it? Whence did he get the name S. tartaricum? Who gave it the name? He (Mr. Bateman) had spent several hours on Monday at the Linnean Society's, and with the assistance of the Librarian (Mr. Kippist), had tried to discover some trace of S. tartaricum, but all to no purpose. Neither among the Holcuses, nor the Sorghums, nor the Andropogons, a genus in which the former are sometimes included, was there any tartaricum to be found, and if any Tartar was to be caught Mr. Hullett must catch him.

With regard to the Sorghum he (Mr. Bateman) had collected the following information. Mr. Fortune stated that at one time the French were very hopeful it might turn out a substitute for the Sugar Cane, and tried it extensively in the south of France, but it failed. It might be useful as a fodder for cattle, but it requires a climate like that of Teintsin or Pekin, and where Rice would not grow its place was taken by tall kinds of Sorghum, some as much as 12 or 15 feet high; and it was from the long stout stubble of this Grass that our cavalry horses in the late Chinese war suffered so severely. Mr. Thompson—that faithful veteran in the service of the Society and of horticulture—remembered it about a dozen years ago in the Society's garden, and about an acre of it was grown near Chiswick station by Mr. Jessop, and was cut for cattle in pieces a foot long. Mr. Bateman also quoted Dr. Roxburgh as to the uses the Holcus or Sorghum is put to, as well as Dr. Royle, who says that the different kinds of Sorghum (called durra by the natives), or Great or Indian Millet, are an important branch of Indian cultivation. The species most commonly grown were S. vulgare and S. bicolor; but in another list all were classed together—viz., S. album, rubens, nigrum, nigricans, and nigerrimum. He (Mr. Bateman) had also examined the specimens in the possession of the Linnean Society, arranged by Dr. Wallich, which formed part of the East Indian herbarium, and all were treated as varieties.

Mr. Bateman concluded by expressing a hope that Mr. Hullett would tell where Passiflora Hullettii (fruit of which had been pronounced superior to the Pine Apple), had fruited; where and when the Durion was fruited; where the Mangosteens and Mangos, which were cut in dozens and sold at 2*s.* 6*d.* a-piece, were produced.

Major Clarke remarked, that he had known Sorghum saccharatum grown as food for horses, and that there were several black-seeded Sorghums which were not S. saccharatum, one of which was grown in Italy as food for chickens.

Dr. Masters asked Major Clarke if he had succeeded in raising seeds from all three forms of Cytisus Adami. That plant and the Cyclamens and Apples at the meeting tended to shake our faith in the power of grafting to perpetuate any particular variety. This was a subject which well deserved fuller investigation than it had hitherto received.

Major Clarke said he had saved three packets of seeds from the three different forms of Cytisus, that he had sent them to Dr. Lindley, who had given them to Mr. Gordon, and that the seeds of the Cytisus Adami, or "hybrid portion," had produced yellow blossoms like the Laburnum.

Sir Philip Egerton invited Mr. Murray to make a few observations on the Coniferæ; and after Mr. Murray had noticed two or three specimens, the names of which were doubtful, Mr. Bateman announced that Dr. Masters would give five elementary lectures on Botany, beginning on the last Saturday in March.

THE INTENSE COLD AND ITS CONSEQUENCES.

Longmead, Hants.—The following is a list of a few trees and shrubs injured by the late severe frost here:—Pinus insignis, young plant, 6 feet high, young shoots killed; Garrya elliptica, killed down to the snow line. Escallonia macrantha bronzed, but the fresh leaves are beginning to show now; it was presented by the late Prince Consort when on a visit here. Azalea indica rubra, young wood killed, while Azalea indica alba standing 20 feet from rubra, was not in the least hurt. They are both by the side of an east walk. Bays and Laurustinus are very much cut up. All my Broccolis, with the exception of the Brimstone, are killed. Brussels Sprouts are not in the least hurt. I may remark that I have gathered this week, from a south wall, some Camellia blossoms, one bloom from Lady Hume's Blush, and three from a Double Red, and twenty will be fully open on the Double Red by the end of the month (February).—J. Sharp, *Gardener to A. Barton, Esq.*

Wilmont, Belfast.—Now that we can look around and see the effects of the unprecedented snowstorm of January, it will, perhaps, interest some of your readers to learn how we have fared on this side of the Irish Channel.

Roses appear to have suffered less here than in many other places, yet they have not come off quite safely. Lord Clyde, Mdlle. Bonnaire, and Monte Christo, are dead; Belle de Bordeaux, Triomphe de Rennes, and Celine Forestier are much injured; Duc de Cazes and Mrs. Chas. Wood are slightly injured. These were all worked on the Dog Rose stock. I have not a single instance of death or severe injury on the Manetti, and, hence, with Mr. Taylor, I am "all for Manetti." Of the buds inserted in the Dog Rose in the autumn, all which had pushed or were prominent have been killed. The common China Rose has been killed to the snow line.

Of evergreens—Laurustinus, Escallonia macrantha, hybrid scarlet Rhododendrons, and Arbutus unedo, have suffered severely. Portugal and common Laurel (particularly those recently transplanted), Sweet Bay, Golden and Silver Hollies, together with young plants of Pinus insignis, have been more or less punished. A plant of Desfontania spinosa is quite dead. In the immediate neighbourhood Araucaria imbricata and Cedrus deodara are extensively killed.

In the kitchen garden, Snow's and Hammond's Cape Broccoli were all killed; Knight's Protecting was much injured; Dalmeny Park proved hardier than any other Broccoli grown here; Savoys and Brussels Sprouts came well through; Globe Artichokes and Cabbages were very much injured; Endive, Lettuces, and White Lisbon Onion entirely escaped, as well as a sowing of Sangster's No. 1 Pea, which was fully an inch above the ground. Out of several sorts of Celery which were unprotected, Laing's Mammoth was the only one injured.—J. M. Bothwell.

GROUND VINERIES.

[From a paper read by Mr. Broome, of the Inner Temple Gardens, at the meeting of the Central Horticultural Society, February 26th.]

Now that the gardening world is every day becoming acquainted with the great utility of these structures, I have thought a few remarks, based upon practice with Wells's ground vineries, might by many be appreciated. The lady and gentleman amateur, the scientific and practical gardener, have already derived much advantage and pleasure from their use; and at this moment in many gardens where horticulture is carried out upon just principles, these structures are used and recommended. Upon their first appearance in gardens they were exclusively employed for Grape-growing, and were carefully stowed away during the many months in which the Vine is dormant; now they are kept in active operation during the whole year. The lady amateur finds that in them she can manage a crop of Grapes, then bring on a few plants for late autumn and Christmas flowering, and afterwards occupy them with a few miscellaneous floricultural pets, bedding, and other plants; whilst by others they are used for the protection of salading, &c. In the present month many ground vineries are devoted to forcing Rhubarb, and I have seen a hotbed made for them and covered an inch thick with ashes, into which are plunged pots of Dutch bulbs, Hyacinths, Tulips, &c.; and others, again, are used in a similar manner for the propagation of bedding stuff, and raising seeds of tender plants.

The scientific and practical gardener can apply these miniature houses to a thousand different uses. But a few days ago I saw a 14-feet length filled with Hyacinths and Tulips, which are intended for our great spring bulb shows, and nothing could exceed the luxuriance and vigour they possessed. I have likewise seen ground vineries applied to the growth of the Neapolitan Violet, and beautifully-coloured blossoms were being

gathered when not a vestige of flower was discernible in the old-fashioned, dark, dismal box-frame, although both were placed near each other, and were subjected to the same and equal management. The plan of arranging the ground vinery for this purpose was extremely simple. In the month of October last, when all the fruit had been cut from the Vines, a bed of the same area as the vinery was marked out, round which common bricks were laid two deep; the bed thus formed was filled with coal ashes, and the Violets, which had previously been potted in 32-sized pots, were plunged in it. The plants were thus exposed to intense light—an agent most essential, as all gardeners are aware, to the well-being of this plant. The arrangement for giving air is likewise so perfect in these structures that the Violets can be exposed wholly in propitious weather, and should it be mild with moisture falling the lids or sides can be raised nearly horizontally, thus exposing the plants to air, whilst affording protection from wet. During the inclement weather we had this winter the vinery was covered with litter, and thatched hurdles placed together over the whole in the shape of a span roof. This protection bade defiance to cold 9° below zero.

During the past season I have seen some magnificent crops of Grapes under these ground vineries. The bunches were of a good size, the berries well swelled and above the average size, with the colouring as perfect as in any that have been cut from more spacious houses, and the flavour was exquisite.

I find many growers, elated with the success of these vineries, intend applying them to the growing of stone fruits, such as Peaches and Nectarines, the trees being planted out and treated precisely the same as the Vines. The slates will be laid down and perforated at regular distances, so as to admit pegs for the purpose of pegging down and laying out the branches. The roots being free to act on the outside, as in the case of Vines, no watering is necessary, as when these fruits are grown in pots upon the orchard-house principle; and the moisture evaporated from the slates, with which the wood and foliage are in contact, prevents red spider, thrips, and other insects from multiplying.

I find the best method of cultivating fruits under Wells's ground vineries is as follows:—At one end of the vinery a hole, 2 feet square, and of about the same depth, is dug out and filled with a compost of good loam, rotten dung, and a little road sand; these should be well incorporated together, previously throwing in about one and a half peck of bones, merely bruised, to afford drainage to the mass, also to feed the Vines during hot weather, or when the heat is so great as to rob the plant of its natural moisture. The bones will likewise absorb the fluids passing down to them more readily by being bruised. All being thus prepared, the Vine is turned out about the middle of March, providing the weather is open and mild, the cane being introduced and pegged down. Air should be admitted at ten o'clock, A.M., by raising slightly the lights; this, with the additional air from the bottom of the frames, will serve to check the Vines from making too quick and premature a growth before the season is sufficiently advanced to assist the formation of the young parts. The cases should be closed again about 2 P.M., if possible securing a little atmospheric warmth, and the Vines should at this period be slightly syringed; the moisture will aid the expansion of the bark and the bursting of the young buds and leaves. This treatment should be continued until the flowers are expanded, when syringing must be entirely suspended and air admitted upon every opportunity. As soon as the flowers are set I find moisture applied in the form of vapour highly beneficial; this can be obtained by pouring tepid water upon the slates. Atmospheric warmth is secured throughout the day, and causes the moisture to evaporate, thus charging the internal air with an agent highly beneficial. As soon as the Grapes have attained the size of Sweet Peas the bunches should be thinned, taking out all ill-shaped and deformed berries, also all those which are in immediate contact with others, taking care not to remove all the interior berries, or the bunches will be loose and ill-shapen. At this period the structure should be kept close and as much warmth secured as possible, as the critical time of stoning will have arrived, and a check would prove highly injurious. As soon as colouring commences as much air should be admitted as is consistent with safety from chilling, and the vinery should be closed sufficiently early to secure, as before stated, as much natural warmth as possible. If this course be pursued I feel confident every success will attend the operator, and will well repay him for the pains he may bestow; the weight and quality of the fruit will equal if not exceed that which is grown in extensive Vine-houses.

I have this winter seen a very happy adaptation of the ground vinery. One of the 14-feet vineries was selected, a site facing south was arranged, a pit dug 3 feet deep, and the sides bricked with 4½-inch work 2 feet above the ground level; upon the brickwork was laid a wooden plate, and to this the vinery was fixed, being screwed down at the four corners of each division. The pit was then filled with cocoa-nut fibre, and such plants as Fuchsias, Pelargoniums, and bulbs were placed in it. These grew with great luxuriance, and, as in other cases where they were well covered with litter and the thatched hurdles, resisted the intense frosts we experienced in January. The same vinery-pit is at this moment filled with fermenting material, and Rhubarb, Sea-kale, and salading are being cut, while there are Cucumbers climbing along the roof and looking as luxuriant as upon ridges in summer. Dutch bulbs are also being brought out weekly for the drawing-room. This plan is merely an enlarged idea of what was before exemplified, and serves to prove how valuable ground vineries are to the horticulturist.

HARDINESS OF TRITELEIA UNIFLORA.

WILL you tell me whether Triteleia uniflora will stand the winter in the open ground? Having it now in bloom in pots—and it is a lovely flower—I feel anxious to know whether it is hardy. Should it be so, it will be an acquisition to our spring bulbs, and ought to be largely grown. In my opinion it is most beautiful.—M. H., *Acklam Hall, Middlesborough-on-Tees.*

[We believe it to be hardy; and should have no hesitation in leaving it in the border throughout the winter, with no other covering than an inch or two of cocoa-nut fibre refuse or coal ashes. Some years since a gentleman wrote to us thus:—"There is one plant I would particularly call your attention to—the Triteleia uniflora. It is a bulb, and described as half-hardy, and blooming in June. With me (on the Mendip Hills), it thrives in a border under a west wall, without the slightest protection, and blossoms from the third week in March to the end of May. I think no flower is more delicately beautiful, and I wonder that it is not as common as the Narcissus."]

ENTOMOLOGICAL SOCIETY.

THE second meeting in February was held on the 18th inst. at Burlington House, the President, Sir John Lubbock, Bart., F.R.S., &c., in the chair. Amongst the donations to the library received since the preceding meeting were the publications of the Imperial Society of Moscow, the Entomological and other Societies of France, Stettin, Dublin, and Christiana.

Mr. Frederick Moore exhibited a number of specimens of a minute wood-boring Beetle, Tomicus monographus, a species not hitherto detected in England, which had proved very injurious to the oaken staves of casks of malt liquors in India, causing in some instances the loss of the liquor to the extent of 50 per cent. The injury had been first noticed in Burmah, and the casks when first landed from the ships did not appear to be at all injured. As many as 1,340,000 perforations had been observed in the staves of a single cask. It was suggested that either the steaming process to which the staves are subjected to bring them into shape, or the taste given to them by the liquor, had rendered them palatable to the insects, which appear to be nearly allied to the Bamboo-borer.

Mr. Newman exhibited the lock of a garden gate completely filled with the mud nests of a wild Bee, Osmia bicornis; some portions of the stem of Sallow, Salix caprea, burrowed into by the larvæ of the Hornet Moth, Sesia bombyciformis; also some large Ants, Formica herculanea or pubescens, said to have been taken at Kinloch Rannoch, in Perthshire, each having made a cell for itself in rotten Oak; and a specimen of Lithosia ancella from Worthing.

Mr. F. Smith exhibited two boxes filled with Hymenopterous insects of great interest, collected at Champion Bay on the north-west coast of New Holland by Mr. De Boulay, including a number of new species of Formicidæ, Mutillidæ, Thynnidæ, and Apidæ.

Mr. Stainton exhibited two species of Microlepidoptera, Zelleria oleastrella and Margarodes unionalis, reared from the Olives at Mentone.

Professor Westwood mentioned that a specimen of Vanessa urticæ had been captured on the 7th inst. at Oxford by Dr. Rolleston, which proved to be a male, and on dissection its abdomen was found to be filled with oleaginous fluid.

Mr. R. A. Wallace read an elaborate memoir on the Pierideous Butterflies of the Malayan Archipelago, in the introduction to which he entered into numerous details as to the geographical range, affinities, and mimetic analogies of the different groups; which led to an extended discussion, in which Mr. Pascoe especially maintained the distinction between the Faunas of the eastern portion of the Archi-

pelago and New Holland, which had been considered by Mr. Wallace as identical.

A very elaborate memoir on the distribution of the species of Lepidoptera in Great Britain and Ireland, on the plan of Mr. Hewitt C. Watson's "Cybele Britannica," by Mr. Herbert Jenner Fust, was read; as well as a paper by Mr. E. Saunders, containing descriptions of new species of Buprestidæ, collected in Penang by Mr. Lamb.

NOTES AND GLEANINGS.

The Duke of Buccleuch, President of the Royal Horticultural Society, has nominated the following gentlemen Vice-Presidents for this year:—Lord Henry Gordon Lennox, M.P.; Mr. James Bateman, F.R.S.; Mr. Henry Cole, C.B.; Mr. W. Wilson Saunders, F.R.S.

—— When announcing the death of Mr. Skinner, we commented on his befriending Joseph Ritter Von Rawicz Warscewicz, and now we have to record that this botanist's death preceded Mr. Skinner's eleven days. He was Inspector of the Imperial Botanic Garden at Cracow, and was only in his fifty-fourth year. He died at Cracow on the 29th of December.

—— The Members of the Royal Horticultural Society will be glad to learn that, as announced in a report in another column, Dr. Maxwell T. Masters has kindly consented to give five elementary lectures on Botany, illustrated by diagrams and living specimens, in the Council-room of the Society, commencing on the last Saturday in March.

WORK FOR THE WEEK.

KITCHEN GARDEN.

If the weather is favourable make sowings forthwith, on well-situated beds of the following vegetables—namely, *Brussels Sprouts*, *Chou de Milan* (Thousand-headed Cabbage), *Cauliflower*, Dwarf *Cabbage*, *Green Kale*, *Savoys*, and *Leeks*, also a little Pomeranian Cabbage, and a sprinkling of some late spring *Broccoli*. Give a slight salting to all *Asparagus*-beds and *Sea-kale* ground. Sow *Peas*, *Beans*, and *Radishes* as soon as the former sowing is above ground. Prick-out very early *Celery* in a frame. Old mellow dung made firm is good, and prevents tap roots. Sow all herbs, *Sweet Marjoram* and *Sweet Basil* on heat. Cover up with litter all early slopes of Radishes, Horn Carrots, &c., whilst the sun shines, about three o'clock, and water them about once a-week with tepid clear manure water.

FRUIT GARDEN.

Protect by all possible means the blossoms of fruit trees. Straw ropes, mats, canvas bunting, Fir boughs, and fronds of Fern, should all or any of them be in requisition. As soon as you have finished nailing the Peach trees, mix sulphur and soft soap water to the thickness of paint, and draw a band of the mixture between the shoots in all directions; this once done, and that well, will secure the trees thoroughly from red spider for a twelvemonth. Throw soot over Strawberry plantations requiring manure. Now is the time for grafting, and for various reasons the mode called whip-grafting is by far the preferable one; in cleft-grafting the divided portions of old wood never re-unite; in saddle-grafting the flow of sap is limited to two tapering strips of alburnum; and rind-grafting leaves cavities on each side of the inserted portion of the scion. In grafting it should be remembered that sections of wood already formed never unite; they are seen, if divested of all subsequent formations, in mere mechanical contact after a lapse of many years, and the scion and stock will then readily fall asunder, nor do the outer barks form a vital union; but when newly-formed tissues of both stock and scion come in contact, they coalesce, and an organised growth immediately takes place. This organisable tissue protrudes from between the wood and inner bark; the inner barks of the scion and stock should therefore be made to coincide as far as possible, and without the least regard being paid to the positions of the outer barks, the nicely fitting of which is unnecessary.

GREENHOUSE AND CONSERVATORY.

Potting will now be a matter of daily occurrence, and on the mode in which this is performed will depend the future success of the plant. We need say little here about the propriety of using fibrous loam or about thorough drainage, their importance is now tolerably well understood; but a few words to the amateur may be acceptable as to the best mode of watering newly planted subjects in general. Let it be a maxim, then, never to water a fresh-potted plant until it is fixed where it is to remain. I have known persons give their fresh-potted plants a thorough watering whilst on the handbarrow to "settle the soil," as it is termed, and then immediately carry them to their destination. This, although called gardening, should be termed "puddling;" it is not possible for plants to thrive after such handling. The soil for potting should be neither wet nor dry; one is as great an evil as the other; it should of the two incline to dryness, and should be pressed tolerably firm, not thumping the pot on the potting-board. The watering at first should not be performed in order to settle the soil, this means shutting out the atmosphere, but merely with the intention of preventing the soil from becoming any drier. Hard balls should be soaked overhead in water a day previous to shifting. The families of Camellia, Acacia, Cytisus, Phajus, Rhododendron, Eutaxia, Citrus, Epacris, Correa, Azalea, and last, but not least, the Rose, will be a blaze of beauty in the conservatory where plant-growing is well attended to. They will now require abundance of water, to which clear liquid manure should occasionally be added. Dispense with fire heat as much as possible; the enormous perspiration caused by a March sun is more than enough for some of the evanescent beauties without the aid of fires. Canvas screens, too, should be at hand to be drawn over the brightest parts of the house for two hours in sunny days. Force on Fuchsias where fine and large specimens are required; a moist atmosphere, with a slight degree of shading, will run the shy sorts into wood by retarding flowering. Those wintered under stages or in cellars should now be brought forth and potted, to give them a start for the decoration of lawns or the flower garden. Brugmansias should be disrooted and started in heat. Shift, when necessary, Australian and Cape plants in a growing state, likewise Pelargoniums, Calceolarias, and Cinerarias, with the view of having fine specimens. Pot successions of Gloxinias and Achimenes, and keep them rather dry and warm.

STOVE.

Orchids are now swelling fast, and many of the blocks and baskets of Stanhopeas, Gongoras, Dendrobiums, &c., will require to be syringed about twice a-week; let it be done on sunny mornings early, and give air freely for a couple of hours for fear of moisture lodging amongst the buds. In shifting large specimens in pots break the pot carefully all round so as to avoid injuring the roots, and shift the whole mass together. Terrestrial Orchids, in general, do better in loamy turf and leaf mould (not too much decayed), blended with the lumps of peat. Renew moss on blocks forthwith. Attend to disrooting and pruning back Justicias, Vincas, Clerodendrons, Eranthemums, Geissomerias, Plumbagos, Poinsettias, Erythrinas, &c., at least those exhausted by flowering, and a few for early work. Those done first, if carried on in due course, will be the earliest next autumn and winter.

FORCING-PIT.

Keep Roses free from insects, watering frequently with liquid manure. Provide successions of subjects for forcing. The Dutch bulbs should not stay long here. The Hyacinths lose much effect when their bells are too much asunder through too much excitement in proportion to the light. Sow tender annuals. Do not forget Phlox Drummondi and Rhodanthe Manglesii, with the Portulacas.

PITS AND FRAMES.

Pot-off Lobelias, and place them in a growing heat; the compost should be light and rich for the first potting. Sow Stocks and other choice annuals, and pot-off all kinds of cuttings as soon as they are ready, filling up the pots again with sorts that are wanted. As soon as the borders are in a proper state sow hardy annuals in patches, and not too deeply—a slight covering for the seeds will be sufficient. Mark the places with small sticks, or make a small ring, which will prevent any other thing being planted over them. Prick-off Clintonias, Portulacas, or other choice and tender annuals that are fit for the operation, and keep them in gentle heat until they are rooted, then remove them to a colder temperature, except the most tender kinds, which should be nursed until milder weather. Air the cold pits continually at night as well as by day, if there be no frost. Pot-off stores for the flower garden, and forward them, more especially scarlet Pelargoniums, Salvia patens, and Verbenas. A good collection of the best hardy annuals should now be sown, they are of most service and most esteemed before the gay masses of Verbenas, Pelargoniums, &c., come to perfection. When a frame or a pit is at liberty I would recommend their being sown in small pots in loamy soil, and not turned out until they are slightly pot-bound; the flower then gains the predominance, and the great proportion

of this above the leaf constitutes the chief beauty of many of the annuals. They are also more easily protected from slugs.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

So far as frosty mornings are concerned, March has "come in as a lion," and it remains to be proved whether it will "go out as a lamb." The frost will do good in three ways—it will help to keep back fruit-tree blossoms, the buds of which were becoming too forward for the season; it will dry and crumble down the soil thrown up in ridges; and the sun, which has followed the frosty mornings, will help all plants that were languishing in the dull weather, and will be of especial benefit to plants in bloom that are intended to bear serviceable fruit. With the exception of planting some Potatoes at the bases of walls, planting-out more Cabbages, hoeing and forking the ground among Spinach, so as to let the air circulate about the plants, and partially dry the over-wet soil, the chief work out of doors has been turning over the ridged ground, and leaving it in shallow ridges so as to have it better exposed to the air and dried before sowing and planting general crops. Much of this labour would be worse than unnecessary in open light soils. In such cases even ridging is often better dispensed with, as, provided the staple has been sufficiently stirred, the crops do better when the light soil is compressed rather than loosened. A heavy soil requires to be made lighter even for *Onions*, provided the surface is rolled when dry with a light roller, or gently patted; and in many cases it is better to dispense with both of these operations, and leave the surface for a quarter of an inch or so loose or open, to prevent the stiff soil cracking in dry weather in all directions, even before the seedlings are large enough to permit of hoeing on the surface to leave it loose. In light soils, even with heavy manuring, a good crop of firm, fair-sized Onions can scarcely be secured without consolidating the surface. Under such circumstances, when the ground was too wet to roll at the sowing time, we have frequently rolled with a light roller when the seedlings were just appearing, or not more than an inch in height, and then if there was the least danger of cracking, a stirring with a hoe, as shallow as possible, between the rows would leave the young Onions firm enough at the surface, and thus tempt them to quick bulbing instead of forming huge thick necks. For all such crops, however, we would sooner wait a week or ten days at this season than sow when the ground was in an unkindly state. Further on in the season sowing must often be resorted to, even if barrowloads of material should be brought for covering. What collects about the potting-bench when riddled is generally very useful for this purpose.

Turnips.—It is too soon to sow yet out of doors unless the young plants are protected from frost, and where deemed of much importance young Turnips would pay as well under glass as young Potatoes. It is not because of their tenderness that it is too soon in most places to sow them out of doors, but because of the simple fact, that when young plants are touched with a few degrees of frost they are almost sure to throw up flower-stems, and if a small Turnip is then formed it is little better than a piece of soft wood. In cold places, when wanted early out of doors, the young plants will need protection in cold nights.

Partly owing to the rains and warmth of autumn, a young crop with bulbs the size of hens' eggs, on the north side of a sloping bank, is already showing flower-stems, and though these may be cut off, others will come, and the Turnips will soon become hard in consequence, so these young plants will not be so useful as we expected, and as we have found them in most years. Those we spoke of lately as pulled up before showing any signs of fresh growth, and which had suffered nothing from the frost at the new year, have shown signs also of growing, and have, therefore, had the tops cut and have been laid in thin layers in a cool shady place, with just a sprinkling of litter over them to preserve them from extremes of weather. These will remain good for use when those on the bank, though much younger, will be too stringy and hard.

The chief work in this department has been keeping up a succession of forced vegetables, Sea-kale, Mushrooms, Rhubarb, Radishes, &c.; forwarding Peas and Beans, and carrying on a ceaseless warfare with our vermin enemies.

In the *Mushroom-house* the fourth piece was finally earthed down in the usual way—that is, covered with rough turfy loam to the depth of about 1½ inch, well beaten, and from a quarter to half an inch of finer soil added, beaten firm, watered gently, allowed to settle a little, and a clean spade drawn firmly over it, so as to leave a smooth surface. This, when a little dry on the surface, is covered with just a sprinkling of hay, which keeps the casing from cracking, and renders the bed more uniform in heat and moisture. In a Mushroom-house that is heated by flues or hot water this hay covering is not essential. We very often use it, however, as we can regulate the state of the bed more easily by its means; and hence, though we have used light soil for earthing over very successfully, we prefer it rather stiff, fresh, and beaten firmly to a smooth surface, so that when we like we can sweep the surface of the bed clean, and thus the spawn is prevented running on the bed instead of sending up plenty of Mushrooms. In a fresh bed, watered and made solid on the surface, the first sprinkling of hay will soon become wet; as the bed dries that will be removed once or twice, and fresh added before the Mushrooms show freely. If they come faster than is wanted, the hay or litter covering is removed. If they are wanted quicker, more is added. If the bed has produced all over at once, and yielded a heavy gathering, then often we sweep the bed clean with a hair broom, water if dry, cover with a couple of inches of rough hay, and in a week or two the bed will be like a sheet with white Mushrooms. Although not always the case, it very generally happens that the Mushrooms thus covered are whiter, and those more exposed come browner in the skin. Another advantage of this hay covering is, that when successional beds are used, the heat they throw off before being ready for spawning will generally be enough for the house without fire heat. We have seldom used the hot-water pipe this season, except during the severe frost in January. From 50° to 55° is high enough for the atmosphere for bearing beds in a house. The advantage of dispensing with hay and using a regular fire heat, is that you see all the beds at once, and there is less refuge for woodlice, &c.; but as it is, we seldom see any woodlice until spring, and then we have beds under the thatched, covered shed open in front. In that shed are good Mushrooms still, but with 8 or 10 inches of litter over them. The fifth piece in the Mushroom-house has had the last layer of dung put on, the dung mixed with turfy loam, and in a week or ten days it will be fit for spawning. The two first pieces are bearing well, the third will show before long. This succession of shallow beds, though entailing a considerable amount of attention, generally secures a good regular supply. Our most celebrated artistes of the kitchen tell us that two things are indispensable to good cookery—Mushrooms and Onions.

Sea-kale.—One of our best gardeners told us the other day that he followed the same plan in winter as we do—namely, took up the roots and packed them in pots, only we put ours in the Mushroom-house, where it is dark enough to cause the Sea-kale to come quite white, and he puts his in any place—a house where there is heat, a stokehole, &c., and covers securely with another pot so as to keep out the light. In one point we differ: he sows every year, so as always to have a succession, and after forcing he throws the old plants away. We plant ours out again, taking them out of doors first and covering with litter, so that they may not be injured by a sudden change of weather. We like young plants very well, but these forced plants so treated we consider quite as good as seedlings of the second year. We mention this all the more, as many in small places may find a little difficulty with seedlings, as, when in the seed leaf, they are subject to insect enemies, and before they attain that size they must be protected in the ground from birds, mice, &c. Plants taken up and forced this winter will, under ordinary treatment, when planted out be first-rate for forcing again in the second winter—that is, after having had two summers' growth. If in the summer the crowns show too many shoots or buds it is well to thin them to two or three. Just as in other cases, if two, three, or more crops are taken from forced plants, they will in proportion be less useful when planted out; but in almost every case, if treated as stated above, they will be as useful for transplanting as one-year seedlings that were sown rather thickly.

Rhubarb.—Similar remarks will apply. We have just turned out some of the roots forced, planted them again, and covered with a little litter. They will not do much the first summer, but they will come strong in the second, and in the following winter will do for forcing again. Good gatherings may be obtained in spring from seed sown in April twelve months before; but to have strong stalks in winter the seedlings should have two summers' growth. We will put a few more lumps into the

Mushroom-house; after that the most forward out of doors, we hope will come in with a little protection. Sea-kale out of doors, we hope, will come in a month or six weeks hence, with merely a box or a pot put over it to keep out the light.

Potatoes.—We did not plant the long earth pit with Potatoes, as alluded to the other week, for the Potatoes were not over-forward, and whilst they remained where they were we would save some covering in these frosty nights; but we must not delay longer than Tuesday or Wednesday. We find those growing in pots must be moved to afford them more room, as crowding early Potatoes is. like all crowding, anything but true economy. Our friend, alluded to above in reference to Sea-kale, gave us a very good idea, which might be often usefully adopted in small gardens where successional cropping must be generally followed. We were discussing the properties of varieties of Potatoes which produced the smallest tops, so as to permit of cropping between the rows, as the various Ash-leaved Kidneys, Handsworth, Frames, Early May, Coldstream, &c. To surmount the difficulty our friend generally plants his early Potatoes thus:—Two rows are planted 18 inches from row to row; 30 inches are left between these and the next two rows, and so on through the space to be planted. In the centre of the 30-inch space he plants in summer permanent strong-growing winter stuff, each row of which will thus be 4 feet from the other. If the Potatoes threaten to encroach, the heads of the two rows are turned towards the 18-inch space without injuring them. Thus the Potatoes are not injured by planting between the rows, the permanent winter crops do not suffer in digging up the Potatoes, and when these are dug up and the ground cleared, lower-growing crops may be planted where they stood. If the Potatoes had large heads the space between every two rows might be a few inches more, and then the interval left might be 3 feet instead of 30 inches. We have much practised this successional cropping by planting between every two rows, but often we would have preferred to have let the crop of Potatoes alone until it was taken up, and have had good strong plants previously pricked out and well rooted to lift again, and such often did best and presented the most regular plantation. We have not for years practised our friend's plan with Potatoes and Winter Greens, but we have no doubt it is well worthy of adoption, as saving so much pricking-out and relifting, and ensuring room for the plants when first turned out, without the liability of their being injured when the crop of Potatoes is taken up.

Vermin.—We are afraid to say how many beautiful tomtits and blackcaps are hanging on the branches of a tree. We are sorry to look at them, for we know the value of tomtits in summer; but it is a clear case, that if they are allowed to have their own way now there will be neither Pear nor Plum for them to dab their little bills into next autumn. We know of no other remedy at this season than close netting. Then there were rats and mice to be thinned and driven away. Will some naturalist tell us if there is war, or at least a feeling of repugnance between the two races, rats and mice? At any rate, we have frequently found that when we had almost freed ourselves of one kind, we soon had plenty of the other, though at times we have had more than enough of both. Frames over dung-beds are dear places to both, and tarring the bottoms of frames outside, allowing the tar to drop on the dung there, is a good way of keeping them away, so long as the tar continues moist and smells strong. Rats for some time were in great force, and trapping half a hundred seemed to decrease their numbers but little; so, having a fortnight ago caught a fine fellow in a trap, we were cruel enough to singe his hair, paint him a little with tar, and let him free again. Since then we have not noticed a single rat. In a few days, however, we had an invasion of mice, three or four varieties; we trapped many, but still they come, and in one night they ate out the hearts of half a dozen Strawberry plants in pots, nibbled Asparagus, cut over Radishes, and cropped over a nice bed of young Carrots, so that, much against our will, we have been forced to resort to poisoning as well as trapping. The varieties of the grass mice, especially, are particularly partial to Strawberry plants in pots just when the centre begins to rise. We used to protect plants in pots in earth-pits in winter, leaving litter over them in severe frost; but we are afraid to trust them out of sight now. We had two plants sent lately with inquiries as to why they would not flower, there being many more like them. The centre had been eaten out neatly by mice. If the plants stand plunged in an open bed mice will rarely touch them; but set them in a frame, or cover them up in a pit, and the mice will soon begin to taste them. Strange that mice, like men, should relish most that which is forbidden and most difficult to obtain.

FRUIT DEPARTMENT.

Much the same as last week as respects general work. Cleared out the litter that protected fruit trees in pots in the orchard-house, fresh regulated, fresh surfaced, &c., to give a neat clean appearance; but some matters here we must defer, and also in other departments, until next week.

Strawberries.—Took out Strawberry plants that had done their work, and replaced them with others, forwarded, as alluded to above, in frames, where a mild gentle heat had been given them. During the earliest stages of forcing, and especially at an early period, it is of importance that mere growth of foliage should not be greatly encouraged until the flower-trusses make their appearance. The most of the Strawberry plants lately moved into houses and pits, were brought from frames where there was just the slightest heat below them, so that the heat was given gradually—a matter of importance when successions are taken into houses. The beds were formed below the frames, chiefly of the clearings from the flower-beds and pleasure grounds, with a few inches of tree leaves above them firmly trodden, and then sprinkled with coal ashes, and on these beds the plants were placed without plunging the pots, as we have long proved that plunging pots full of roots in a bed where there is much heat, before March or April, has a tendency to cause the roots to find their way out at the bottom, and thus encourage a free growth of leaves instead of the free rise of the flower-truss. A correspondent highly satisfied with the vigorous look of his plants tells us, "On the 1st of January I filled a pit with Strawberry plants, plunged the pots in a bed, the heat at the bottom of the pots averaging 85°, and the top heat ranging from 58° to 65° at night; the roots are striking into the bed, and though the plants are seldom watered, the leaves are so green, and fresh, and large, that I cannot but think giving heat thus at once will far excel the jog-trot, gradual, bit-by-bit-addition system you are always recommending. Why not have a trial of a more quick slap-dash way?" Ah, why not? What of the crowns of the plants and the flower-trusses amid all this dash and vigour? We should not be greatly surprised if the fine leaves have taken all the running, and that in many cases the flower-trusses will never appear. Unfortunately fine foliage is not what is most wanted at the dessert table.—R. F.

COVENT GARDEN MARKET.—March 6.

The cool weather has somewhat diminished the supply of out-door vegetables, but prices remain nearly as last week. Asparagus is the only article a little dearer. The Potato trade remains heavy; prices are a trifle lower.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes	each	0	6 to	0	3	Leeks	bnnch	0	6 to	0	0
Asparagus	bundle	8	0	12	0	Lettuce	per doz.	2	0	3	0
Beans, Kidney, per 100		3	0	4	0	Mushrooms	pottle	1	0	2	0
Scarlet Run, ½ sieve		0	0	0	0	Mustd. & Cress	punnet	0	2	0	0
Beet, Red	doz.	2	0	3	0	Onions	per bushel	4	0	5	0
Broccoli	bundle	2	0	3	0	Parsley	per sieve	4	0	6	0
Brus. Sprouts	½ sieve	3	6	0	0	Parsnips	doz.	0	9	1	3
Cabbage	doz.	2	0	3	0	Peas	per quart	0	0	0	0
Capsicums	100	0	0	0	0	Potatoes	bushel	4	0	6	0
Carrots	bunch	0	6	0	8	Kidney	do.	5	0	6	0
Cauliflower	doz.	4	0	8	0	Radishes	doz. bunches	1	0	1	6
Celery	bundle	2	0	3	0	Rhubarb	bundle	0	9	1	0
Cucumbers	each	2	0	3	0	Savoye	doz.	3	0	4	9
pickling	doz.	0	0	0	0	Sea-kale	basket	2	0	3	0
Endive	doz.	2	0	0	0	Shallots	lb.	0	8	0	0
Fennel	bunch	0	3	0	0	Spinach	bushel	5	0	0	0
Garlic	lb.	0	8	1	0	Tomatoes	per doz.	4	0	0	0
Herbs	bunch	0	3	0	0	Turnips	bunch	0	6	0	0
Horseradish	bundle	4	0	6	0	Vegetable Marrows	dz.	0	0	0	0

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	2	0 to	3	0	Melons	each	2	0 to	4	0
Apricots	doz	0	0	0	0	Nectarines	doz.	0	0	0	0
Cherries	lb.	0	0	0	0	Oranges	100	5	0	10	0
Chestnuts	bush.	10	0	18	0	Peaches	doz.	0	0	0	0
Currants	½ sieve	0	0	0	0	Pears (dessert)	doz.	3	0	6	0
Black	do.	0	0	0	0	kitchen	doz.	2	0	4	0
Figs	doz.	0	0	0	0	Pine Apples	lb.	4	0	8	0
Filberts	lb.	0	0	0	0	Plums	½ sieve	0	0	0	0
Cobs	lb.	0	9	1	0	Quinces	doz.	0	0	0	0
Gooseberries	quart	0	0	0	0	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	6	0	10	0	Strawberries	lb.	0	0	0	0
Lemons	100	5	0	10	0	Walnuts	bush.	10	0	20	0

TRADE CATALOGUE RECEIVED.

William Hooper, St. John's Hill, New Wandsworth, London, S.W.—*Catalogue of Vegetable and Flower Seeds.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Books (*S. B. C. V.*).—For the lad you mention no books would be more suitable than "The Garden Manual," "In-door Gardening," and "Out-door Gardening." You can have the whole free by post from our office if you enclose sixty postage stamps with your direction. (*A Lover of Nature*).—Whoever told you that a knowledge of botany would prevent your becoming a good gardener advised you ignorantly. Books to suit you are "Henfrey's Elementary Course of Botany," published by Van Voorst, price about 8*s.* we believe. "British Ferns" you can have from our office free by post if you enclose forty-six postage stamps with your address.

Overhanging Trees (*Neighbour*).—As no notice is taken of your request to have the branches of the worthless trees removed, let your solicitor write to the proprietor, and warn him that unless the lopping, &c., is done forthwith you will sue him for damages in the County Court

Variegated Lilies of the Valley (*S. S.*).—Those you allude to were exhibited by Mr. Salter, Versailles Nursery, William Street, Hammersmith.

Green Turf for Camellias.—"In reply to 'H. E.,' he will observe in reading my article that in potting my Camellias I finish off with a surface of half an inch of finely sifted loam. I find this a sufficient check for the weeds, but if any should appear 'H. E.' will find that one weeding will be sufficient.—Robert Fleming."

Hays's Patent Constant Stove (*E.*).—We think that you must not have employed properly prepared charcoal. We have one in an entrance hall, and have no tube. There is a slight smoke when first lighted, and a smell of burnt peat throughout the day, but we do not object to the smell. If we did we should have a small tube from the valve into a chimney or the outside air. The great drawback to this stove at present is the difficulty of obtaining a supply of good peat charcoal. We are informed the demand has exceeded the means of supply, and will be remedied.

Various (*C*).—Messrs. Byvoet, Overveen, Haarlem, and E. H. Krelage and Son, Haarlem, are very extensive dealers in bulbs. Any florist could supply you with Campanula pyramidalis to flower this year. No one could state marks whereby to distinguish Hyacinths of the same colour and form which have been mixed.

Potatoes (*Grammars*). — You can procure your namesake Potatoes from Mr. Frederick Gill, Dorset Nurseries, Blandford. He can also supply two other excellent Potatoes—Red Robins, great croppers, round, and rich; and Salmon Kidneys, which I am now eating—they are excellent. These and Grammars are always good up to digging time. Addison says, "No one is ever thanked for advice." I will, however, advise "Grammars" to purchase all three. The best novelty in every respect is the reniform Yorkshire Hero, derived from the Lapstone and Ashleaf. It is second early, a great cropper, very hardy against spring frost, and as good as the Ashleaf. I have had it three seasons.—W. F. Radclyffe.

Peat Charcoal (*T. M.*).—Our correspondent wishes to know how to make peat charcoal. "T. M." has made a trial, but with a waste of four-fifths of the peat. It is so tenacious of combustion when once ignited that "T. M." found nearly all of it consumed before being thoroughly charred. Should it be dried before being charred? "T. M." tried it just as taken out of the ground and very wet.

Roses in a Greenhouse—Planting Flower-beds (*A. B. A.*).—1, You should prune the Tea Roses in the greenhouse at once. We would, as you propose, cut all weak shoots back to one bud, but on stronger shoots leave two or three buds. You will need little more insight into pruning Roses than this, that if you leave only a few buds you may expect each bud to furnish a shoot that will bear Roses. It is often better, therefore, to cut out weak growth and leave more than one bud on a good shoot. 2, Verbenas would do very well for your round bed, filled with yellow and blue Crocus. Both will do better if the Crocuses are in rows or bands, so that the Verbenas can be planted in the intermediate spaces and a little rotten dung forked in before planting. 3, We suspect your variegated Alyssum is the Variegated Arabis, as the former is not hardy. We do not plant groups, or we might do nothing else, but we criticise proposed planting. Your group would look very well if your central star-like figure were filled in the centre with pink, and the four wings with purple, edged all round with Alyssum. Then 5, 6, 7, 8 might be two scarlet beds and two yellow ones, the first edged with Cerastium, the second with blue Lobelia. 1, 2, 3, may be planted in bands of colours.

Encouraging Field Mushrooms (*T. S.*).—You do not say whether your field in which you wish to encourage Mushrooms is in tilth or in grass. If in grass your chances are most favourable, and in that case towards the middle or end of April and the beginning of May we would advise inserting pieces of spawn the size of a hen's egg, say 2 feet apart, lifting the turf to the depth of 1 inch or 1½ inch so as to insert it. The process would be quite as successful if you were to put a small quantity of fresh fibrous soil below the spawn, replace the turf, and beat it down. This will cause the spawned pieces to be a little higher than the surrounding grass, and so far save the spawn from being over-watered. When you gather the Mushrooms throw the bottoms and stalks about the field.

Hotbed of Fermenting Material (*Inquirer*).—In Vol. X., page 277, there are directions for managing such a hotbed, and any one by attending to these directions must be successful. However, we will publish a few more details probably next week.

Cucumbers (*J. Batty*).—Sion House Improved is a smooth-fruited variety. Kelway's Perfection is black-spined.

Muscat Grapes Spotting and Shanking (*T. Wilson*).—We have no doubt that in your case lifting the roots of the Muscat Vine would effect the desired cure, and we should prefer doing so to planting a young Vine, though the last mode would involve least trouble. In lifting begin at the extremity of the border by means of a deep trench, and work and pick away the soil, saving the fibres, and tying them in mats or cloths as you proceed. Then add at least a portion of fresh soil, fresh plant within 9 inches and 6 inches of the surface, and give a coating of 15 inches of warm litter to set the roots going. If in tracing out the roots there would be danger of injuring much the neighbouring Vines, then we would cut out the Muscat Vine, add fresh soil, and plant a stout young Vine, but if there is no such danger the older plant will be the better in every way.

Glass for South Conservatory (*T. H.*). — Hartley's patent, any rough glass, or coloured ribbed glass, will answer your purpose well. We have seen glass tinted green answer admirably. There will be plenty of light for the plants, and you will require no shading.

Netting for Protecting Peach Tree Blossom (*A Lady Gardener*).—The netting sent for our inspection, and to which you allude, was that kind known as hexagon netting, which you will find advertised in our columns. It is a very good protection, but to keep off severe frosts it requires to be doubled. Woollen netting, with quarter-of-an-inch meshes, is good. The netting should be removed daily during mild weather after the flowers open, but it may remain on during cold, frosty, damp days. A board 6 or 7 inches wide would be useful to fasten the netting to. The board will do if 2 or 3 inches wide, and in that case be equal to a coping.

Cucumbers Stopping for Trellis (*W. B.*).—Stop the plants at the second rough leaf by taking out the point of the shoot with the end of a sharp knife, and, making choice of the best of the shoots resulting from the stopping, train it to the trellis, cutting the other away. Take out the point of the shoot at 1 foot from the top of the trellis. For three lights you will require three plants, or if the house or trellis is more than 6 feet wide, a plant at every 2 feet along the front of the trellis. "Thompson's Gardener's Assistant" is one of the best of works on practical gardening. You will obtain the whole of the book in twelve parts at 2*s.* 6*d.* each, or in one volume 31*s.* 6*d.*

Cocoa-nut Refuse with Soil for Cucumbers (*Tyro*).—Cocoa-nut refuse will answer well for mixing with your soil for Cucumbers, if used in the proportion of one-third to two-thirds of your black garden mould. The time you name will answer well for making the bed.

Treatment of Old Bedding Pelargoniums (*Excelsior*).—You would be doing well to shake out the plants from the large pots they are now in, and pot them in fresh soil; turfy loam two-thirds, and one-third leaf mould, being a good compost. Keep the plants rather dry, yet moist, until the roots are working in the fresh soil, then water more freely. Afford the plants a light and airy situation, shift into larger pots in about six weeks after shaking them out of the soil, and in May remove them to a frame or pit.

Mrs. Pollock Pelargonium Culture (*Idem*).—The plants should now be shifted from 48's into 32-sized pots, using a compost of turfy loam two-thirds, and one-third well-rotted hotbed manure. They should be carefully watered, have a light and airy situation, and when the pots become full of roots must be shifted into 18-sized pots. Avoid copious waterings, and afford a position near the glass with a fair amount of air. Over-potting and over-watering are very injurious.

Grapes Rusted (*Charles*).—Grapes are apt to have a brownish skin round them if subjected to a sudden check from a great change of temperature, or if sulphur has been used freely on a heating medium when the berries are young and tender. Under such circumstances it is best to apply the sulphur during the day, when there is a considerable amount of air on, so that the strength of the fumes may pass off before the house is shut up. Perhaps Hamburghs are most easily thus injured.

Specimen Caladiums and Achimenes (*Idem*).—For good specimens of Caladiums proceed thus:—Keep the rhizomes, as lately described, free from cold in winter, shake them out and repot as soon as they begin to move, potting them singly in small pots, to be afterwards placed singly in larger pots, or three or four plants at once in a large pot. Drain well, use turfy loam and peat in equal portions, with about one-sixth of old rotten cowdung and silver sand, and give bottom heat until the leaves come to their best. To grow good specimens of Achimenes, select the tubers, place them singly in well-drained pans or pots, using light rich soil, and set them in a temperature of from about 60° to 65°. When the plants are up and from 1 to 1½ inch in height, plant them in soil similar to that recommended for Caladiums, in their flowering pots, the small kinds at 1 inch apart, the larger kinds at from 2 to 3 inches apart, and plunge in a gentle bottom heat of about 75° or 80°, and a top heat of from 60° to 65°, with a rise from sunshine. No sun must touch the leaves, or those of the Caladiums either, when damp. Air should be given early, for if there is confined moist air in the place, and the sun strikes on the plants, the leaves will be spotted to a certainty. When hardened off, for conservatory, &c., they will not be so easily affected. Achimenes for late work may be grown well in a cold pit after the end of May.

Tree Fern, &c. (*Diana Milner*).—Dicksonia antarctica, one of the handsomest of the tree Ferns, would thrive admirably in a fernery in which the temperature falls as low at night as 38°, but is usually about 40°. Excellent young plants may be had for 5*s.* of any of the principal London or provincial nurserymen. Adiantum trapeziforme, macrophyllum, and tenerum would not flourish in the temperature named; they require a heat of from 50° to 55° at night. Adiantum Sanctæ-Catharinæ is a handsome Fern, introduced since the "Cottage Gardeners' Dictionary" was published; but it requires a stove temperature. It is not very expensive, costing from 5*s.* to 7*s.* 6*d.* for a nice plant. The frond sent is that of some Nephrolepis, but not being in fruit we are unable to say which.

Tanning Garden Netting (*F. A. M.*).—Boil it half an hour in a strong infusion of oak bark in water.

Heating a Small Greenhouse (*D. Dougal*).—1, For such a house as you describe, 15 feet long and 8 feet wide, a swing sash below the apex at each end, say 2 or 2½ feet as the base of the triangle, will be enough for top ventilation. You may have a square of 18 inches as near the top as you can, if you would prefer that shape. This left always open in summer, and regulated in winter, would be air enough, with or without your proposed opening in the back wall. Two sashes in front should be made to move, or if you had four ventilators in the wall below your sashes, you might have all the glass in front fixed as well as the roof. 2, We think a £3 Hays's stove would suit you well. You must purchase it in London. 3, That is one of the drawbacks of patented articles. The stove, we presume, must be sent to Glasgow, if there is no place for sale there appointed, and the stove will only suit if the fuel suitable is sent from the emporium. Neither coke, charcoal, nor cinders will do. 4, A small iron stove with a chimney through the roof would answer for your place, but it would not be so cleanly as Hays's stove, and the latter would be safe with merely a gas-pipe from it into the open air.

Pelargonium Sports (*A Young Beginner*).—They are rarely permanent, being very liable under even slight changes of treatment to return to the original characters. A sport is no more liable to sport again than its parent.

Bedding Pelargonium, Calceolaria, and Verbena Cuttings (*Fred.*).—Cuttings of bedding Pelargoniums and Calceolarias put in now and forwarded in heat will flower finely in July or August, and throughout the autumn, but not so well as autumn-struck cuttings. It is not too early to buy Verbenas; pot them, and take off the tops when of sufficient length for cuttings, and both these and the plants from which they are taken would do for bedding out. It would be better to place the Verbenas in two-inch pots, as they are then much more easily moved; but they would grow more strongly planted out in the bed.

Gravel Walks Loose (*Idem*).—We do not keep loose gravel on our walks, as they would not be comfortable to walk upon, and would always have more or less of a rough appearance. The surface should be even, smooth, and of fine gravel, kept well rolled.

Lilium auratum Culture (*A. H., of B.*).—The bulbs we presume are now in pots, and if so, and these are of a suitable size, they will only require a top-dressing of rich soil; but if in small pots, and not yet potted the operation should be performed at once. A seven-inch pot will be suitable for a medium-sized bulb, and a nine-inch pot for a large one. The pot should be well drained by placing a large crock over the hole, on that some pieces of less size to the depth of 2 inches, and over them an inch or so of the rougher parts of the compost. If the bulbs are in pots, turn them out, and remove the loose soil, but do not break or injure the roots; place a few inches of soil in the pots, set the bulb in the centre, and cover the crown about an inch deep. The pot will not be full to the rim, which is all the better, an inch or two being left for top-dressing when the shoots are a few inches higher than the rims of the pots. The soil may consist of two-thirds turfy loam, and one-third leaf mould or very rotten manure, adding one-sixth of sharp sand. The soil should be kept moist until the plants are growing freely, when liberal supplies of water should be afforded. After blooming diminish the supply of water, and during the winter keep the soil moderately moist, but not wet, and protect from frost. Afford an airy, light position in a cold pit or greenhouse, or an open sheltered situation out of doors.

Flower-beds (*A Constant Subscriber*).—Both your proposed arrangements are good if you keep the heights of the rows correct. To make a quick display you would require to plant the general stock a foot apart, the Lobelias from 4 to 6 inches, and the Cerastium from 2 to 4 inches.

Heating a Pine-pit (*W. C. W.*).—Your two-inch pipes will do for bottom heat in your Pine-bed, 6 yards by 2. We prefer that these pipes should be surrounded with open rubble, and covered with the same to the depth of 2 inches or so, to having the pipes go at once through the plunging medium, because the heat is more equally diffused, and because the pipes would so dry the plunging medium that heat would not be well diffused. The pots should stand near the rubble. We would prefer tan or leaves to sand or gravel for plunging in; but the others will do, or even a bed of earth. It will be as well to have some pipes communicating with the rubble, that you may pour down water when a moister heat is wanted at the bottom. You can have the "Pine Apple Manual" free by post from our office, if you enclose thirty-two postage stamps with your address.

Names of Plants (*G. S.*).—Your specimen is what is usually called Scilla præcox, but we are inclined to agree with Sir J. E. Smith that it is only a starved form of S. bifolia. (*A. B. C.*).—2 and 8, Cupressus, but species not distinguishable; 3, Juniperus chinensis; 4, Juniperus rigida; 5, Cephalotaxus Fortuni; 6, Juniperus macrocarpa. (*Ardavon*).—Asplenium bulbiferum (?), and Pteris serrulata. (*G. F., and A Constant Reader*).—It is impossible to name plants from such fragments. Specimens in flower are required.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending March 5th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 27	30 017	29.990	44	32	47	45	N.E.	.09	Hazy clouds; dry haze; overcast at night.
Thurs. 28	30 344	30.162	45	23	46	45	E.	.00	Cold haze; dry slight haze; fine and frosty.
Fri. .. 1	30.565	30.472	45	28	44	44	N.E.	.00	Partially overcast; dusky clouds; overcast at night.
Sat. .. 2	30.687	30.655	40	25	43	43	N.E.	.00	Foggy; cold hazy clouds; slight frost at night.
Sun... 3	30.666	30.518	45	30	42	42	N.E.	.01	Dry and frosty; fine; overcast; slight rain.
Mon... 4	30.433	30.233	47	33	42	42	N.E.	.00	Hazy and cold; fine, but cold and dry; overcast.
Tues. . 5	30.125	29.974	49	25	41	42	N.E.	.00	Densely overcast; fine; very fine; frosty at night.
Mean	30.406	30.286	45.00	28.00	43.57	43.29	..	0.01	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BREEDING GAME FOWLS.

(*Continued from page* 171.)

It is to be observed in breeding light and dark colours together, that the cock should be of the light and the hens of the dark colour, as in this case the hens being of the darker colour will rule the colour more than the cock. If a dark cock is used for breeding with light-coloured hens, the result will be few or no light-coloured birds, which clearly shows that the cock influences colour more than the hens do as a general rule.

Some breeders object to dub their brood cocks at all, but this is a mere matter of opinion.

In breeding in the spring of 1848, I tried an experiment on the sex of eggs, selecting eleven good eggs to produce all cocks; they were of the willow-legged breed of the Black-breasted Reds. The hen hatched ten healthy chickens on the 21st of April, out of the eleven eggs, and they all grew up to be cock chickens, and were the most pugnacious brood of this colour that I ever reared, constantly fighting.

Some breeders choose their finest "stag" to make a brood cock of, keep him undubbed, but dub all others, and put him on the best walk by himself with a few hens only, to try what sort of chickens he throws as a stag, before breeding from him as a full-grown cock at home. Many also try their best pullets in the same way before breeding from them as full-grown hens, putting them with their best stag. The old breeders used to try some of their stags by weighing them in to fight against full-grown cocks in a main, when, if they fought well against full-grown birds, they were good, if not, they were condemned as bad. The shortest-legged stags were used for this purpose, and at least three of them, as these look most like cocks, being more down on their thighs than the long-legged early-hatched stags ever are as a rule.

By mating the brood cock and brood hens about Christmas, they become well acquainted with one another, and the hens are well attended to by the cock by the proper time for laying eggs for hatching, which is in February and March. I generally mate my brood fowls two or three days before Christmas, putting only a few of the very best-shaped hens to the best-shaped brood cock—never more than six hens, of course; and I think this the best way of breeding first-rate stock birds.

When a stock of Game fowls has been bred in-and-in too long they begin to be slower in their motions, the hens and pullets do not lay so well as formerly, and they moult late and feather badly and slowly. When this is the case they should be crossed with a strong healthy brood cock, and the progeny by him retained instead of the older birds. All birds from a first cross are most vigorous if the cross is good, and best for the pit. Second, third, and following crosses are less vigorous and spirited than a first cross, as the first mixture of different blood always produces most vigour. By keeping two different strains always separate, a first cross may always be had when wanted.

In breeding it must be noticed, that the best-laying hens never breed the best birds—that is, hens which lay in winter are not the best to breed from, having exhausted themselves before the proper season. The best hens to breed good hard birds from, are those which do not lay at all (after moulting at the proper time), until the middle of February, thus laying their first clutches of eggs at the proper season for hatching.

As to the age of eggs for hatching, eggs will hatch easily, if well kept, at a month old, but this, perhaps, is rather too stale. My plan was to collect all the eggs ten days old, or fresher still,

and to put them into a large jar full of dry bran, sticking them points downwards deep into the bran, and thus keeping them in an upright position, and then placing the jar in a cool cupboard. When eggs were required for a sitting I chose the best-shaped of these, none of which were older than ten days. All eggs kept in this way I found to hatch well and without failure.

Game fowls, if healthy, should be in full feather by November, and should moult in September or October, feathering well and quickly, as healthy birds should do. Some are found too bare in moulting. Such birds are not so healthy. No Game hen if short in body and of the proper size can cover more than twelve eggs properly. I use eleven eggs to a sitting in cold or cool weather, and twelve in warm weather, and never more, though many give thirteen eggs. A little earth at the bottom of the nests, not too dry, assists in hatching the eggs. As with Pheasants, for nests I prefer short hay sprinkled with lime.—Newmarket.

(To be continued.)

BREEDING DARK BRAHMA POOTRAS.

(*Continued from page* 170.)

I mentioned last week the principal characteristics in shape to be attended to in breeding these fowls, and I propose next to make a few remarks upon the colour and other fancy points.

One of these, and of no small importance, is the comb, which, as it is more peculiarly characteristic than in nearly any other breed, ought to receive very special attention, but is, on the contrary, very generally neglected. I had a note a fortnight ago from a gentleman who has taken numerous prizes for Dark Brahmas last season, remarking that he found it almost impossible now to procure hens with good combs; and another only a day or two ago from one of the most successful exhibitors of the light variety, in which the writer observed that he now seldom saw a good comb in either colour, and that all Brahma combs were fast degenerating into "cup combs," and would, if not watched, soon lose their peculiar triple character. I quite agree with both the writers, and wish to draw special attention to the point before it is too late. I believe the evil to have arisen primarily from the various crosses which have been attempted with the idea of improving the breed, and which I shall notice by-and-by, and to have been since perpetuated by want of care. As it is, even where the triple character is apparent, the comb is too often a shapeless confused mass. Amongst fifty-three entries for cocks at Birmingham, I particularly noted that there was only one comb which could be called perfect (belonging to a bird shown by Mr. Boyle), and five more tolerably so. The others were all examples of more or less shapeless confusion. In a good Brahma comb, I need scarcely say, there should be three distinct divisions, each running straight along the head and evenly serrated. The centre division should be about double the height of those on each side, and thin, and the whole as small as possible, so as to sit firmly on the head, and not tremble every time the bird moves. An overgrown comb which shakes with every movement is very unsightly.

Even when the parents have had unexceptionable combs, it may be as well to caution beginners, and even some old breeders, that it is by no means easy to "grow" them in perfection upon the heads of the cockerels. There is a continual tendency to grow too high, or, what is still more ugly, to shoot out sideways. After comparing notes with several experienced exhibitors, I am of opinion that this arises from too much or too stimulating food. If there be more flesh-forming material supplied than is consumed in the general system, the remainder appears to go into the comb. At all events, the overgrowth I am speaking of appears more frequently in cockerels bred in comparative confinement, and is more rare where the birds have a wide grass run, to keep the bowels freely open, and work off any amount of feeding by active exercise. I can only point out the fact, each breeder must avoid the consequence as best he can; and it will be seen that the problem is a rather difficult one, for if the bird be underfed, it, of course, does not attain a proper size, whilst undue forcing leads to the result mentioned.

I wish, however, to express a decided opinion, that far more stress should be laid upon the comb of the Brahma at all exhibitions than is now the case, and for the simple reason that, as already observed, it is a marked characteristic of the breed. I am no advocate in general for laying undue stress upon "fancy points," I could wish that our general poultry-judging were very much more the other way; but where any point is one of the distinguishing marks of a breed, I contend that it stands upon a different footing; and I cannot understand why any gross defect in the comb of a Spanish or Hamburgh fowl should be instant disqualification, and almost any amount of deformity be tolerated in a Brahma. No one would think of giving a prize to a Hamburgh cock whose comb was not, at all events, passably good; yet the Hamburgh comb is approached in character by the Dorking, and is, therefore, far less peculiar and characteristic than the comb of the Brahma, which is altogether unique and peculiar to the breed.

I have dwelt at length upon this point, having a strong sense of its importance, a feeling which is shared, as I have said, by some of the most eminent breeders. I venture to ask for it the careful attention of our poultry judges, and would also like to invite the opinions of others of your numerous readers. I write in no dogmatic spirit, but simply from a strong feeling that unless more stress be laid upon the perfection of the comb, and very soon, that peculiar formation which is in my eyes one great beauty of a Brahma will speedily be lost. That it has real beauty few who have seen it in perfection will be disposed to deny.

My remarks on this head have taken up so much room, that I must defer anything concerning the colour of the plumage until my next communication.—Nemo.

(To be continued.)

INQUIRY.

Has any one applied for the eggs advertised in "our Journal," at 10*s*. 6*d*. per sitting, from birds of all the "crack" strains, and giving the address as M. Brooksbank, 4, Back Rolleston Street, Manchester? We are informed that it is about one of the lowest localities in Manchester, in fact, not a "stone's throw" from Pott Street, New Islington, notorious for the "Long firm;" that No. 4 is a cottage at about 2*s*. or 2*s*. 6*d*. per week, pretty clean for the neighbourhood; and that a few mongrel fowls are kept, which roost in the cellar.

CROSS BREED OF FOWLS.

I can from experience strongly recommend a cross between the Brahma Pootra and Spanish. I use a Brahma cock from a stock bred in-and-in for ten or twelve years, and common Spanish hens, costing 2*s*. 6*d*. each; the chicks are healthy, never naked in their chickenhood like their parents, come early to maturity, and are first-rate layers of fine eggs in winter, when eggs are generally scarce, as well as in summer; the pullets lay large eggs as compared with other pullets, and they make large handsome fowls. I have some in full laying weighing about 7 lbs. each. The cockerels at six months old always weigh more than 6 lbs. I killed some in November; one of them, five and half months old, weighed when trussed 5¾ lbs.; no shutting up, stuffing, or cramming, but running in the yard and feeding with the others. The pullets are close sitters and good mothers.

I sit my hens anywhere in small houses, like dog-kennels, covering the sides, roofs, and backs with tarred felt. To each house I have a small yard 3 feet 6 inches long, 3 feet wide, and 3 feet high, formed by means of laths. The roof is covered with tarred felt. Out of about thirty pullets put to sit last year, only one refused the nest.

The cross-bred fowls are very quiet, a three-feet wire fence being sufficient to keep them in. If I had had prime birds to breed from, and a good run, no doubt the result would have been better still.

I feed my fowls principally upon barleymeal and fine bran in equal quantities, and every day I mix with their food half a pint of finely powdered chalk, or half-a-pint of animal charcoal, costing 14*s*. per cwt., and I afford a small feed of oats or barley before they go to roost.

My fowls are kept in a yard covered with coke dust. The same yard has been occupied by them for five or six years; sometimes I have had in it as many as eighty or ninety at a time. I keep it perfectly sweet by occasionally dissolving in boiling water about 2 ozs. of McDougal's (Arthur Street West, City), "cattle plague soap," costing 6*d*. per lb., adding about three gallons of cold water, and watering the yard as one would a flower-bed. Before I adopted this plan, in wet weather the yard used to smell very offensively, not only to myself but to my neighbours; now it is always sweet. I keep the house free from smell by every day or

two covering the dung with dry earth powdered, and sprinkling two or three handfuls of McDougal's disinfecting powder, costing 10*s*. 6*d*. per cwt.; and although I only clean the house out every three or four weeks, there is no smell upon opening the door in the morning.

I write in the hope of inducing some who now keep mongrels to try this cross breed. I can assure them, once they do so they will never again keep mongrels; and from experience I can safely say that any person having twelve of these fowls will never be a single day in winter without eggs, no matter how severe the weather may be. My fowls never ceased laying during the late severe weather.—Pro Bono Publico.

BRAHMA POOTRAS.

In your answer to me, No. 308, page 156, you say your experience does not agree with mine, as you do not find Brahmas eat according to their bulk. In order to test the matter I have adopted your suggestion, and carefully kept account of the food consumed in four days by six Brahmas and twenty-three common farmyard fowls, the result will prove that Brahmas are enormous eaters compared with common fowls.

The Brahmas are confined in a run 36 feet long by 7 wide, the twenty-three common fowls in a run 48 feet long by 24 wide. They were all kept on bruised oats for two days, and the next two days on bruised barley. The result is as follows:—

TWO DAYS ON BRUISED OATS.

	d.
6 Brahmas, 18 pints, weight 5 lbs., value at 4*s*. per bshl. of 3 stones	5¾
23 Common fowls, 84 pints, weight 8¼ lbs., ditto ditto ditto	9½

TWO DAYS ON BRUISED BARLEY.

6 Brahmas, 7½ pints, weight 3 lbs. 14 ozs., value at 5*s*. 3*d* per bshl. of 52 lbs.	4½
23 Common fowls, 16 pints, weight 8¼ lbs., ditto ditto ditto	10

The birds are all adult fowls. This experiment proves that six Brahmas eat as much as twelve barndoor fowls of crushed oats, and as much as ten barndoor fowls of crushed barley. In fact, one Brahma will eat nearly as much as two common fowls, such as are called Dorkings in farmyards.

You recommend Spanish for confinement. If I give up Brahmas, may I ask if they lay as many eggs as Brahmas, and if they are hardy in confinement?—J. R. Beyton.

[We cannot understand why your fowls eat so much more than ours. Are you much patronised by small birds, or has anything access to the pen? When food is laid down overnight, rats often eat it. We cannot understand why the difference exists between oats and barley, both being crushed, or why the common fowls should eat more and the Brahmas less when fed on barley. We advise you to keep to the oats. They are better for the birds and cost less. We still say your fowls cost too much to keep, and think you will do well to try whole corn measured. This would be only an experiment. A pint of corn should feed a fowl three days.—B.]

INCUBATORS.

"A. H. S. W." makes a serious error when he assumes that the facts I stated in the Journal of Feb. 14th were not tested by means of a self-registering thermometer; on the contrary, I beg to inform him that they were, and I am anxious you should allow me a few lines to say this, as it may appear that I am careless in what I state, and am not to be relied upon. I think he ought to have ascertained this point from me personally before putting it forth that I was assuming.

I can further asseverate that the incubator I am working has not for more than a week past been higher in temperature than 106°, or lower than 95°; this is with the attention of three or four, certainly not five minutes daily, and I leave it from 11 P.M. until 7.30 A.M. without attention. The evaporation of water in the boiler is so slight that I have not found it necessary to add any water for nearly a fortnight; and this fact alone proves that the incubator works equally—when the machine is once in proper working order very little heat suffices to keep it on the balance.

"A. H. S. W." states that he found it quite impossible to keep my incubator always at the right temperature. I am free to confess that it is in the last degree impossible to keep it or any other always exactly at an equal temperature; but it is by no means difficult to keep it to a range of 8° or 10°, which is allowable, and is quite safe, so long as the medium is about 102°, and perhaps it will be remembered that I stated last August that I worked an incubator for two months without altering the supply of heat during the whole time.

No one can be more gratified than myself if "A. H. S. W." has really succeeded, as he believes he has, in constructing an "Eureka" incubator, one that requires little or no attention; but I very much doubt this, and am sorry to differ from him. I may say on my own responsibility and without fear of contradiction, that it is impossible to construct an incubator which will not be affected in some degree by the variations of external temperature. When warmer weather comes he will find his incubator subject to the same contingencies to which all others naturally are, and I argue that it by no means follows that because the heating source is at boiling point the eggs will therefore be at the greatest degree of temperature they will reach; for the simple reason, that being some distance removed from the heating source, as they necessarily must be, the distance between will be liable to be acted upon by outward temperature; and the comparatively much greater expense his incubator must involve to keep it continually at so great a heat, detracts from the value of the machine, as so much is needlessly lost.—John Brindley.

HYBRIDISATION—PLURALITY OF QUEENS IN A HIVE.

In investigating the various phenomena exhibited in bee life, we should ever be careful that our observations be accurately made, and the inferences drawn from them be in accordance with facts. This is especially necessary with regard to the subject of hybridisation brought forward by Mr. West, and also to that of a plurality of queens, alluded to by "A Lanarkshire Bee-keeper." With regard to the first, the subject appears to me to be entirely inexplicable according to any other hypothesis than this—taking for granted always that the Italian bee in our possession is itself pure and free of all taint—that the young queens meet with more than one variety of drones. The consideration of this question evolves some points of a very interesting character. I could wish that I had the facilities with regard to locality, of carrying out some few simple experiments to settle definitively the points still in doubt.

I was in hopes that your valuable correspondent "R. S." would, from his favourable position, do something in this way, as, I believe, it was his intention; but though some obstacles may have interposed hitherto, I hope he will renew his endeavours during the coming season, and favour us with the results.

There is one point about which all seem to be agreed—namely, the rapidity of deterioration in the Italian bee when kept in proximity to the English bee; and this is the case apparently when, in the circumstances, the probabilities all point in another direction, as, for instance, when the Italian element is in the ascendant. According to the doctrine of parthenogenesis, a ligurianised apiary should not deteriorate, even in circumstances where impuritics manifest themselves. A restoration to its normal condition, in the absence of all foreign influence, should even then be a matter of time only. Is there any apiarian whose experience uniformly coincides with this result?

I observe that in Mr. S. Bevan Fox's remarks on hybridisation (4th December, 1866), he leans to the opinion that the paternal influence diminishes with the age of the queen. In the case supposed by Mr. Fox—namely, if the hybrid queen had been superseded and her successor crossed by his Ligurian drones, of which he says there were large numbers close at hand, then, so far from that being a cause of the degeneracy he observed, it should, according to parthenogenesis, have increased rather than deteriorated the purity of the progeny. It is only in isolated apiaries, however, where such questions as this can be well determined, and the subject is one on this, as well as on other grounds, well worth prosecuting.

I see it is the opinion of the Editors (No. 305), that a distance of five miles is not beyond the limits in which hybridisation may take place. I should be inclined to doubt this, and would feel obliged by their kindly favouring us with the grounds of this opinion.

In regard to a plurality of queens in a hive, an old and a young one, we should always be careful in drawing inferences, as in the case narrated by Mr. George Fox, of Kingsbridge (18th April, 1865); and I have had several instances in my own apiary, where from the desertion of the queen and bees from one hive to another we may be deceived. In the case referred to, a queen was found encased at the entrance of a hive in which

its own queen, on inspection, was seen pacing about in perfect freedom. We must therefore carefully distinguish betwixt such accidental cases and others of a different character. I recollect of Mr. Woodbury having narrated the case of a plurality of queens, a young and an old one, in one of his hives during autumn some two or three years ago. "A Stewarton Apiarian" remarked at the time, without contradiction I think, that this was no uncommon occurrence; and I see "A Lanarkshire Bee-keeper," in a recent article, seems to be of a similar opinion. I do not think, however, that the experience of our most eminent apiarians justifies such statements. I am inclined to believe rather that it is only in exceptional conditions we ever find such anomalies, and consequently that they are of rare occurrence. In all my experience I only know of three cases. One took place during unfavourable weather prior to first swarming, and the other cases occurred in hives in which queens were reared to supersede defective reigning ones. In one of these cases both queens lived together apparently in perfect amity for upwards of three weeks, and both were fertile when I separated them. This is the most remarkable anomaly of the kind which ever came under my own experience or knowledge. Indeed, I am not aware that any similar case has been recorded by any other apiarian writer.—John Lowe.

[We have ourselves known several cases in which common queens have received Italian fecundation at a distance of from two to three miles; whilst Dzierzon, the very highest authority on this subject, states that many similar instances have been observed in which the nearest Italian stock was more than a German mile distant—one German mile being nearly equal to five English miles.

With regard also to a plurality of queens, the great German apiarian says that in a stock of bees only one queen is generally found, except when rainy weather sets in at the time of swarming, in which case a young one often hatches before the old one has departed, and several young princesses may then exist together for some time. But besides swarming time, we may also, in autumn, winter, or spring, occasionally find two queens in one hive, one of which, although generally old and more or less mutilated, is still borne with patience, whilst the other, a vigorous young one, is the reigning queen. The wings of the old one are, at all events, usually gnawed off through the attacks of the young queen; but her jealousy, which seems greatest immediately after hatching, ceases by degrees until, when she has become fertile, her whole attention and activity are directed to filling the brood-combs with eggs.]

TOMTITS versus BEES.

Some months since a plea was made on behalf of tomtits, that they only consumed the dead bees, and, consequently, did no harm to the bee-keeper. Liking the merry little birds and willing to give them the benefit of the doubt, though against my own convictions, I spared them, with the following result:—They have breakfasted regularly off my bees throughout the winter; they have tapped at the mouth of the hives with such vigour (I presume to induce the unfortunates to come out), that they have taken all the paint off the hive-entrances, and in the case of an old hive have made a hole nearly large enough to enter—in fact, they have much damaged them all. On Saturday I placed some comb full of honey in reach of the bees, who were busy in the sunshine, and was not gratified to see it devoured with the utmost apparent satisfaction by the birds.—C. C. Ellison.

NEW BOOK.

The Management of Bees. By W. J. Pettitt. *With a Catalogue of Hives and Apiarian Furniture.* Dover: Pettitt.

This is a new and enlarged edition of a pamphlet by Mr. Pettitt, the well-known hive-manufacturer of Dover, in which a brief discourse on "The Management of Bees," introduces a full catalogue, with engravings, of "Bee-hives, Bee-houses, and Apiarian Furniture," to the different items of which is appended a succinct description, with the prices at which they are sold. Many of the hives are unquestionably very ingenious, whilst we have no doubt that some are useful, and may be conveniently and profitably worked. A few of the names strike us, however, as being remarkable from having apparently been conferred on the *lucus a non lucendo* principle. For instance, the "Ayrshire or Scotch Hive" is actually delineated as being hexagonal; so that poor Dr. Cumming would appear to have made a very unnecessary confession when he admitted that the Ayrshire hives, which he described as hexagons, were really octagonal. "The Woodbury Observatory-hive" is also represented as being furnished with opaque shutters; whereas one of the main features of that gentleman's contrivance was the uninterrupted admission of light at all times. The "American" and "Canadian" hives likewise are doubtless very elaborate structures; but we may be excused for doubting whether they would not be repudiated equally by the genuine Yankee and the native of British North America as being nearly, if not entirely, unknown to the bee-keeping denizens of the New World.

OUR LETTER BOX.

The "Long Firm" Again.—In addition to our warning published last week we have had several letters informing us that the same "S. R. Reid," 54, Pett Street, New Islington, Manchester," had written for eggs, &c. In every instance the vendors required a post-office order payable in a fortnight to be pre-remitted, and in no instance did S. R. Reid comply with that wise requirement. Let all vendors act similarly.

Floor of Piosty Yard (*W. X.*).—As for reasons assigned you object to stone, slate, and bricks, use asphalt made in the way we have often directed for making garden walks. They are waterproof.

Soft Eggs (*Salop*).—As the hen has a supply of lime (it ought to be pounded chalk, old bricklayers' rubbish, or calcined oyster-shells), her egg-system is inflamed, and most probably from over-fatness. Put her upon low diet, only a little barleymeal, plenty of mashed potatoes, and lettuce leaves.

Egg within an Egg (*C. A. J.*).—It has frequently occurred, and requires no detailed notice.

Hen-feathered (*Hamburgh*).—A cock usually having sickle feathers in his tail is said to be "hen-feathered," and the tail in form is that of the hen of the same breed.

Vulture-hocked Brahma Pootras (*Subscriber*).—We believe vulture hocks are sufficient to override all merits, and to disqualify a bird however good he may be in other respects. He would have no chance against one without the appendage.—B.

Removing Eggs as Soon as Laid (*A. B. B.*).—We always remove our eggs a little later in the season. Our trouble is to make the hens forsake their nests. Three or four broody ladies take possession of the same, and growl lustily if disturbed.

Spurred Dorking Hens (*M. E. M. B. A.*).—The spurs you mention are not only unimportant, but they are very common in Dorkings, especially in large birds. Breed from such by all means, and do not cut the spurs in any way.

Scurfy Legs—Breeding Game Fowls (*Lanky Lad*).—A good country grass walk with plenty of green food is the best cure, if any, for scurf in the scales of the legs. Toast steeped in port wine or sherry is good. Some use a potash (potass), or soda wash for the legs. Vinegar is also often used as a wash for scurfy scales of legs. Pure-bred Black-breasted Reds seldom or never throw chickens with any brown on the breast. When this occurs it is generally from a cross of the Brown-breasted or Ginger-breasted breeds. Cock-fighters' breeds will always stand better than birds not bred for cock-fighting, as they match them in breeding for this purpose, and their birds are harder. Some exhibition birds are bred from cockers' strains, and stand remarkably well, and are more showy than the pit birds, and also larger and heavier. Exhibition birds are softer and more fleshy than the cockers' birds. Game may be easily bred hard by choosing hard short-bodied stock, and putting only a few hens to the cock, choosing spurred hens.—Newmarket.

Decayed Stock Hive (*Mens Conscia Recti*).—We could not discover the pin you speak of, and were therefore unable to identify the particular cell to which you refer. We were, however, able to perceive foul brood in the two darkest combs, although, doubtless, from its having remained in the cells during the winter it had assumed a more treacley appearance, and was of a thicker consistence than any which we have before observed. The breed in the third comb appeared healthy. We fancy that owing to the presence of the disease the stock must have dwindled very much during the autumn, although its doing so escaped your notice at the time.

Greatest Number of Hives in an Apiary (*A North Staffordshire Bee-keeper*).—I once counted late in the season, and after the autumnal destruction by brimstone had taken place, thirty-four stocks in one corner of an orchard half a dozen miles from Exeter, and the farmer's wife, to whom they belonged, told me she had ten more on a neighbouring farm. This extensive apiary, which flourished during many years, and in some summers had numbered eighty colonies, originated from a single swarm, which the good dame informed me she had in her younger days brought home from some miles distance on her head. My North Staffordshire friend is quite in error in believing that I have lost swarms through over-stocking.—A Devonshire Bee-keeper.

POULTRY MARKET.—March 6th.

We have still but a moderate supply, but trade is dull.

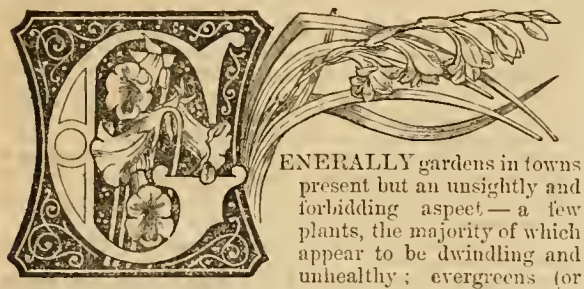
	s. d.	s. d.		s. d	s. d
Large Fowls	3 6	to 4 0	Pheasants	0 0	to 0 0
Smaller do.	3 0	3 6	Partridges	0 0	0 0
Chickens	2 0	2 6	Grouse	0 0	0 0
Goslings	6 6	7 0	Guinea Fowls	2 6	3 0
Ducklings	3 6	4 0	Rabbits	1 4	1 5
Pigeons	0 10	1 0	Wild do.	0 8	0 0

WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 14—20, 1867.	Average Temperature near London.			Rain in last 40 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
14	Th	Meeting of Zoological Society, 8 30 P.M.	51.1	35.2	43.1	19	19 af 6	0 af 6	36 af 11	18 af 2	8	9 28	73
15	F		50.8	34.2	42.5	19	17 6	2 6	after.	12 3	9	9 11	74
16	S	Royal Hort. Society Promenade, 3 P.M.	51.3	34.3	42.8	13	15 6	3 ?	50 1	57 3	10	8 54	75
17	Sun	2 Sunday in Lent.	49.8	32.7	41.2	12	13 6	5 6	1 3	35 4	11	8 36	76
18	M	Meeting of Entomological Society, 7 P.M.	50.2	33.3	41.7	11	10 6	7 6	13 4	9 5	12	8 19	77
19	Tu	Royal Hort. Society, First Spring Show.	51.3	33.3	42.3	13	8 6	8 6	25 5	39 5	13	8 1	78
20	W	Meeting of Society of Arts, 8 P.M.	51.6	33.9	42.7	15	6 6	10 6	35 6	6 6	○	7 43	79

From observations taken near London during the last forty years, the average day temperature of the week is 50.9°; and its night temperature 33.8°. The greatest heat was 69°, on the 19th and 20th, 1836; and the lowest cold 17°, on the 17th, 1846. The greatest fall of rain was 1.11 inch.

TOWN GARDENING.



GENERALLY gardens in towns present but an unsightly and forbidding aspect — a few plants, the majority of which appear to be dwindling and unhealthy; evergreens (or rather ever-*blacks*) in galloping consumption, reminding one of the inmates of an hospital, rather than of vegetable life and vigour; the whole more calculated to excite feelings of melancholy than of pleasure and satisfaction. Sometimes, owing to repeated but abortive attempts to coax plants to grow, the entire contents of the garden are grubbed up and discarded, and the area which they occupied is paved or gravelled over, a few garden-pots, perhaps, and a few green sticks remaining for some time in a corner as memorials of the blighted hopes of the owner.

Having had an experience of twenty years in the management of a town garden, a few remarks, the result of that experience, may prove acceptable to those of your readers who may be struggling with the same difficulties with which I had to contend at the first; for during the earlier portion of that period I had many failures and disappointments to lament, but as I became acquainted with what, under proper treatment, would succeed and what would not, things gradually assumed a different appearance, and my garden became like an oäsis in the desert, and was uniformly admired by friends and neighbours, some of whom were encouraged by the hints I gave them to strive for a similar success.

I must, however, describe the general circumstances of the garden, first presuming that what I mean by "Town Gardens" are not such as are situate on the skirts and suburbs of a town, which commonly possess most of the advantages of the country, but such as are found in the midst of a town, and that a smoky town. Mine was in the heart of a large manufacturing town, containing with its suburbs (all of the same character), a population of 120,000. It was on the brow of a cliff of red sandstone, about 80 feet above the ground level of the streets below, the soil being not more than 2 feet deep on the average, and consisting chiefly of comminuted particles of the rock beneath. Its length was only 100 feet and its breadth 60, forming a parallelogram, the base of which was to the north, and bounded by the house; a considerable portion of the western side was flanked by lofty buildings, and the remainder of it by a wall about 7 feet in height; almost the whole of the eastern side had a similar wall, but there was against it in the adjoining garden a row of stately Elms, which had arrived at maturity before steam was introduced into the town to any extent. The south end, on the edge of the cliff, was enclosed with a dwarf wall and iron railings, through which, when standing near them, the spectator had a view of rows of smoking chimnies bristling throughout with larger and more aspiring columns, from which volumes of black cloud were occasionally belched forth. I had not only to contend, therefore, with the soot which fell from similar chimnies round about me, but sometimes with a horizontal stream of smoke, which flowed in from the south, filling us with smuts, though I am happy to say that the wind prevailed less from the south direct than from any other quarter.

These were difficulties to encounter of a sufficiently formidable character. I found the garden when I succeeded to it consisting almost entirely of gravel, with a decapitated Sycamore near the end, a stunted Abele Poplar in a corner, and little else. I observed that the attempts at grass plots in the neighbouring gardens consisted of tufts only here and there, patches of the bare soil being chiefly prevalent. Nevertheless, I determined to try one. I had a quantity of rich soil introduced into the garden, and formed beds for flowers along the western and eastern walls, a narrow one also at the south end, and three or four small parterres in the centre, which were surrounded with fresh turves from a neighbouring meadow. A broad gravel walk skirted the beds along the eastern and western side and end, with a bend or sweep from it dividing — the lawn shall I say?—no, but more modestly, the grass plot, into two unequal portions, the smaller one, containing the Sycamore, being in the south.

Let me here observe, for the benefit of country amateurs as well as those of a town, that a gravel walk should always be wide enough to allow three persons abreast comfortably to perambulate upon it. If there be four persons strolling about they can easily go in couples; but if there be three, and the walk is only wide enough for two, one must trudge before or follow behind in solitude, which is anything but agreeable.

The garden being thus laid out, the next thing was to stock it, which I did with plants of various descriptions, and a few shrubs and evergreens; but now commenced my trials. The first arose from the turves introduced, which, besides containing many troublesome weeds, were thickly sown with the larvæ of the crane fly, or daddy long-legs, the grub of which is voracious, and most injurious to the soft and succulent roots of grass and of all herbaceous plants. Everything drooped that was attacked by them. I was not then acquainted with a simple mode of destroying them, which is by watering them in the spring season, when they are in the grub state, with a weak solution of ammonia, or they should have had *quantum suff.*; but I kept them under by watching and destroying them as they came out of their holes, which they do in the twilight of the morning and evening (chiefly at the latter time), during the last days of August and throughout September. The fresh-emerged flies are also easily taken early in the morning, before they have laid their eggs, by hand-picking; for they are a dull fly if the weather is frosty or damp, but if it is dry and hot they are brisk and lively, and will not suffer you to approach. I was much assisted, also, throughout the spring and summer by the starlings, which appeared to know instinctively

where the grubs were concealed, and made good havoc among them.

I soon discovered, also, that the beds on the grass would not answer, independently of insect depredations. The sun was hot upon them during a fine summer's day from morning till evening, there being no shade from the walls as in the side beds, and they were soon scorched up, being upon a rock with no depth of earth. They were also much injured by gales of wind, which came from one or two quarters round the neighbouring buildings with concentrated force, and broke the plants to pieces. I therefore abandoned the centre beds, and sodded them over in the autumn with turves, which I was careful to have procured from a different locality. Nevertheless, the next spring I had an inundation from them of a grub of a different species; it was like a caterpillar in appearance, about 1¼ inch in length, and moved on its feet as rapidly, but it had a tail like a rat, nearly as long as its body, beginning with the same thickness as the body, and gradually tapering to a point. They soon found their way on to the gravel walks, and as they could not climb the tiles which bordered both the grass and the beds they were easily swept up and destroyed—in quantity a full half-peck. I never before saw any grubs like them, nor have I ever seen any resembling them since. Their length, including head and tail, was upwards of 2 inches in some of them.

I still had a great difficulty in keeping my grass alive; it was frequently watered, as also were the beds, but it seemed to scorch up the more with watering, as likewise did the plants. I was soon convinced by experiment that the fault was a too slight watering—not that it answers to deluge the plants, and let the water run away; they require, and the grass especially, a continued soft shower. I had, therefore, a tap laid on, and procured a sufficient quantity of india-rubber tubing to enable me to direct the water from the tap to any part or corner of the garden. India-rubber is far better than gutta percha, and little more in expense. The latter is not nearly so flexible as the former, and is apt in dry weather to burst, and become useless. I had a fine rose to fix on to the brass spout, to receive which I had an iron rod with a curl or two at the top, which I could stick into the ground and remove from one part to another; and I contrived to fix the brass rose to the curl at top in a perpendicular position, so that when the water was let on it spurted upwards like a fountain some 12 or 14 feet in height, exhibiting beautiful rainbows if the sun was out, and falling in a soft shower of minute particles on everything within a radius of 10 feet. If there was a breeze it was wafted in one direction or another beyond that radius; and by leaving it in each place before removal to another at least for half an hour, the whole garden became gently and thoroughly saturated in the course of an afternoon; for I did not begin to water until the shadows from the western side began to draw on to the grass, and there I always began first. Twice a-week, though I kept the grass well mown, I found quite sufficient watering even in dry and hot weather to keep all green and flourishing. For the trees I had a different nozzle to the spout, by which I could send the water with great force on to the stems and branches, taking care not to destroy the leaves, and by this means they were in a great measure cleansed from soot and smoke.

Though things now began rapidly to assume a different appearance, I had yet to learn what would flourish, notwithstanding the smoke, and what would not. I had to ascertain this entirely by experience; for the numerous gardeners who attended the market, which is an excellent one for flowers and plants, I found knew little or nothing about it, their produce of this description being generally purchased by persons who resided in the suburbs, or for window-culture only in the town. I was repeatedly assured that a plant would succeed in the town, which I found to my mortification would not succeed at all; and this assurance came from parties too honourable wilfully to deceive, but they had no real experience of town culture themselves.

I will commence, then, with those plants which will best endure the test, among the foremost of which are *Dahlias*. All sorts flourish and blossom freely, but the hardiest are the yellow and the white, which also are not considered dainties by the caterpillars and earwigs, and used to be left in the ground by me throughout the winter, protecting them with a little dry litter only. If, however, the borders in which Dahlias are planted are backed by walls, they are drawn up to an inconvenient height—5, 6, and even 7 feet. To remedy this I latterly planted only the dwarf kinds, from 1 to 2 feet only in height, in open situations; but these grew to 2 or 3 feet in height, and answered very well, only they required to be taken up for the winter.

I may here remark that most plants which grow to the height of 2 or 3 feet, if near a wall, will bend away from it, especially in hot weather, evidently seeking for a freer circulation of air. About half a century ago I remember a Sir Richard Phillips maintaining a sharp controversy with another philosopher, whose name I forget, on the question whether plants are *pushed* up or *pulled* up. Like the two knights in the fable who tilted furiously at each other on the momentous question, whether a shield on a certain statue in view of each was gold or silver, so these assailed each other with similar fury and a similar result, impartial readers coming to the conclusion that both were in the right, and that plants may be both pushed up and drawn up. The fact, however, which I have just stated of plants bending away from the perpendicular when a wall is near, shows clearly that there must be attractive influences from without the plants, as well as the propulsive ones from within.

Whilst on this subject I would notice another fact, which may interest the general reader. Years ago, when "my lines had fallen in pleasant places" (as, indeed, I am thankful to say they have now), I built a parsonage-house in the letter L-shape, and in the angle, where there was on one side a blank wall with a south aspect, I planted a Pear tree. For the first three or four years it did not flourish, the reason assigned by gardeners being, that the spot was too dry, being protected from the west and south-west rains by the other side of the building. After this period, however, its growth improved remarkably, and it bore excellent fruit. A few feet from the stem of the tree there was a well, on opening which, to repair a pump that was supplied from it, I observed that the Pear tree had sent forth a single branch of its roots to this well, down which it had to descend fully 10 feet before it could reach the water, and thus I accounted for the favourable change which had taken place in the growth of the tree. It would, however, have been a nice and knotty point for the doughty philosophers just referred to, under which power the tree was influenced in this instance.

Chrysanthemums likewise will endure the smoke, more especially the bushy sorts with small flowers. They like to be frequently removed; they need not be raised from cuttings, but succeed well by division of the roots, of which, indeed, they are all the better; the flowers dwindle if the root is too large. My plan was to shift them every spring, and make them change places with the Dahlias, giving to each hole, for both plants, a little fertilising compost.—Philokepos.

(To be continued.)

PLANTING PEAR TREES.

QUINCE AND PEAR STOCKS.

(*Concluded from page* 174.)

Now for the Pear stock. I have nothing to say against it where the soil and climate are favourable, when the space is not small, and when immediate production is not desired. The Pear tree delights in a strong loam, the subsoil a marly clay, or even gravel, free from stagnant water. On light soils, with a ferruginous sandstone bottom, it may grow and occasionally afford good crops, but it never thrives; and yet it does so on light soils, the subsoil of which is marl, or of an otherwise calcareous nature, or gravel free from sand and superabundant moisture. On a wet soil it may live, but does not thrive. The Pear on the Pear stock is longer-lived, and some say furnishes a greater produce than on the Quince; but that is opposed to my experience, for I find that the largest and most handsome fruit, and, for the area, the heaviest crops, are borne by trees on the Quince. Such bear from the first, making a good return for the ground and labour long before trees on the Pear stock produce any quantity of fruit worth naming. In fact, planting an orchard of Pear trees is planting for another generation.

But what of trees on the Pear as pyramids? They are very well where the soil and climate are suitable; but they do not bear with such certainty, the fruit is not so fine as from trees on the Quince stock, and the trees can only be kept productive by frequent lifting, which, when they are becoming old, is not safe. They require much more room, and however well pinched, outgrow the space, and are then neither useful nor ornamental. The Pear on the Pear stock requires plenty of room to develope its full proportions; it is then longer-lived, more healthy, and any loss of production in the beginning is

counterbalanced by the heavy returns after a few years. I wish these remarks to be taken apart from the fact that some varieties do not thrive on the Quince; and though it may be desirable to grow such as bushes or pyramids, I think it is a pity to work a scion on a large tree, and then to keep it down, by frequently cutting its shoots, to the size of a stunted shrub. Would it not be more reasonable to work on the Quince, or something more nearly approaching the size at which the head is to be kept, instead of on the Pear? The Pear in its natural state is a tree which, though not attaining such proportions as the Elm, Beech, Lime, or Oak, is anything but low-growing; the Quince at its best is only a low-growing tree or tall shrub: hence Pear trees upon it as a stock can never attain such a large size as upon the Pear stock.

Apples on the Crab are only suitable for orchards, and for walls or espaliers where long shoots are desirable or required; whilst for dwarfs, pyramids, espaliers, and walls where long branches are not wanted, trees worked on the Paradise stock are better, for they fruit earlier, thrive where the Crab is unhealthy, produce finer fruit, and can be grown in less space. The Paradise stock is raised from layers, and its growth is not so free as that of the Crab, which is raised from seed. The Paradise stock has its roots near the surface, and these do not descend so quickly in bad soil as those of the Crab, which, from its very nature as a seedling, roots deeply; and in the case of hot, light, shallow soils the Crab stock causes canker in the trees worked upon it, whole branches continually dying off. On the Crab the trees are not more healthy than on the Paradise stock, for what suits one suits the other, with this difference, that the Paradise lives where the Crab will not. For instance, I have some pyramids on the Paradise stock, also on the Crab, about ten years planted; those on the Crab are cankered, and produce fruit as much "pitted" as the branches are spotted with canker, whilst those on the Paradise stock bear their half bushel of fruit without speck or crack. The soil is a shallow loam over gravel. There is no difference in the culture, and yet there is a great difference in the results. A good top-dressing of manure is quickly consumed by the trees on the Paradise, but the roots of those on the Crab have gone too far down. These trees are 7 feet high and 5 feet through.

Three years ago we planted some pyramids on the Paradise; they each bore half a dozen fruit in the first year, in the second a dozen, and last year one and a half dozen, except one kind, Lord Suffield, which would bear itself to death if allowed, and of this I thinned out the fruit to a dozen, and such fruit! —they were as large as a man's fist. The roots are so near the surface that the rains have washed them bare, showing how they liked the top-dressing. This year the trees must not be allowed to bear such a crop, for I want them larger. I may state that we have some planted so deeply that the junction of the graft and stock is covered; they are rooting from the Apple above this point, but I shall lift them and cut away the Apple roots. They cannot do better than they have done, and I fear the same result with them as with the trees upon the Crab stock if the roots are allowed to go down.

The Paradise stock exerts an influence on the Apple in the same manner as the Quince on the Pear, but in a less degree; but the former two being more nearly related, the check to the returning sap is not so great, and the growth more closely corresponds. I have not found the Paradise an unhealthy stock except when surface-dressings have been neglected; the roots then go down for moisture, or they perish from want of it.

The whole matter resolves itself into "C. C. E.'s" words, that "whether Pears on their own roots and Apples on the Crab are or are not better than on the Quince and Paradise," appears determined "by the size they are intended to attain and the soil they are to grow in;" and the question to be answered before planting a garden is, "Which are the best to plant?" I give my views below; others, I hope, will state theirs. Nothing can better illustrate my own ideas than the following: —About this time last year I was asked to give advice in the re-arrangement of an old country house and grounds. The house was decayed, the gardens old, and yet there were in the orchard Pears on the Quince stock, which bore exceedingly well. The junctions of the stocks and scions were covered; the grass had overgrown that part, or the trees had been so planted. However, they bore well, and were as large as any Quince tree I remember seeing. The house was pulled down and a new one is now being built, and is perhaps completed. A new garden had to be made, and a terrace garden and croquet ground were to take the place of the orchard, which had to be stubbed up. The soil is a good substantial loam, over gravel, and Apple and Pear trees, respectively upon the Crab and Pear stocks, thrive in it. To plant an orchard of Pear, Apple, Plum, and Cherry trees would not be advisable, for the family would need fruit of the kinds named many years before Pears on the Pear stock, Apples on the Crab stock, Plums on standards, and Cherries on the Cherry stock, would come sufficiently into bearing to meet its requirements, but I advised and planted an orchard of such trees. On both sides of all the walks in the kitchen garden I have planted or shall plant Pears on the Quince stock, Apples on the Paradise stock (the English Paradise, the French is worthless in our climate), and a few Cherries on the Mahaleb, and the walks being numerous a goodly number are already planted, and more will be placed there. Those planted are plentifully furnished with fruit-buds, and will bear this year if allowed. I have in addition planted a row of Pears, and another of Plums in a sunny open strip of land, about 70 yards long, the Pears on the Quince stock at 4½ feet apart, and the Plums at twice that distance; and I should have planted a row of Apples on the Paradise stock, only some of those from the orchard, also on the Paradise, were removed, and there are some standard trees. The wall trees were planted in the usual way. The bush and pyramid trees will bear and afford a sufficient supply of fruit until the orchard trees come into bearing. Had the bushes and pyramids been omitted I fear the gardener's post would not have been an enviable one. There is fruit for the time being and prospectively.—G. Abbey.

PELARGONIUMS OF THE PAST SEASON.

By this term I mean simply those of the greenhouse; all those which go under the names of Zonal, Bedding, or Nosegay Pelargoniums I have nothing to say about. The last season was so exceptional, so thoroughly hostile to all the occupants of the garden, that it was impossible to say which were good and which bad, for all were bad alike; even the old-established favourites looked poor and washed out, comparatively speaking. I must, therefore, pass them by with this one remark, that I did not see anything that struck me as likely, even in good seasons, to be of a particularly striking character. There are a few promising flowers this season, among them three by a new raiser, Mr. Groom, of Ipswich, which, I have been told by those who know such things well, are in shape and substance beyond anything that we have. I mean, then, to confine my remarks to those which are ordinarily known as Greenhouse Pelargoniums or Geraniums, and of these the varieties raised by Mr. Hoyle and Mr. Foster still take the lead. Others follow, but it is at a very great distance.

As far as I have been enabled to judge, the best three flowers of last season were—

1. *Charles Turner.*—A fine scarlet variety, with a pure white throat. The upper and under petals are of a fine orange scarlet. The upper petals have a deep maroon spot, the lower ones are plain. The shape of the flower is excellent, and the pure white throat gives it a very brilliant appearance. The variety is also of excellent habit and growth.

2. *Progress.*—A flower own brother to John Hoyle, but even better than that noble flower in its form. The substance of the petals is very good, and the whole habit of the plant very fine.

3. *William Hoyle.*—Certainly the very darkest variety that we have; in the style of Achilles. The upper petals are almost black, with a very narrow margin of light carmine; the centre of the flower white. Unfortunately, like its progenitor, the growth is delicate.

Of the other flowers of Mr. Hoyle's there were—

Albertine.—A very pretty flower, soft-looking in colour, and with the lower petals somewhat tinted with lake.

Decision.—Lower petals deep rose, tinted and shaded with a deeper colour; top petals rich deep maroon, narrow carmine margin, with a very light edge. A good and well-shaped flower.

La Blonde.—Rose lower petals shaded with deep rose, broad edge of rose.

Lady of Quality.—A refined flower; rose lower petals, dark maroon top, narrow margin of carmine

L'Inconome.—Another shaded flower, but of no particular character.

Mrs. Waite.—Bright pink lower petals; upper petals of a brighter and deeper shade; centre of the flower white. A good grower.

Nabob.—A fine-habited flower; ground colour a bright rose,

with very deep spots on the lower petals; medium-sized blotch on the upper petals. This will, I think, be found to be one of the best spotted flowers that we have.

Queen Bess.—Lower petals orange rose; upper petals deeper orange maroon, narrow border of carmine.

Queen of Gipsies.—Orange rose, tinted with a deeper shade of the same colour; maroon upper petals bordered with carmine.

Selina.—Lower petals crimson scarlet; top petals scarlet, shaded with maroon.

Sovereign.—Large white-centred flower; rosy lake lower petals; deep lake top, shaded with black.

Of these the best I believe to be Decision, Lady of Quality, Mrs. Waite, and Nabob.

All these are seedlings of Mr. Hoyle's, whose flowers are the only ones that I have had the opportunity of seeing constantly, so as to be able to form an opinion of their merits. Mr. Foster's flowers have not hitherto seemed to me at all equal to them in their general character. I believe that now, however, there is a great improvement in the strain by the introduction of fresh blood into it; and that, as Mr. Foster, jun., is as enthusiastic in the raising of seedlings as his late father. I have no doubt that we shall see his flowers more approaching those of Mr. Hoyle's than has hitherto been the case, if, indeed, we have not arrived at very nearly the farthest point that we shall see reached in this lovely flower. It is sometimes hard to expect any improvement, and yet so we thought half a dozen years ago; but how far short of our present standard are the flowers of those days. There is, indeed, one cause that may effectually prevent this improvement, which is rapidly affecting all florists' flowers—viz., that rage for bedding plants which is now so universal. Take the pages of this Journal. A goodly octavo volume has been written during the past twelve months on a little plant at which a few years ago everybody would have turned their noses up—Viola cornuta. I do not deny its being a pretty little plant, and useful for the purpose, but it only receives any favour because of its being used as a bedder. While this has been so largely written about, who has cared to make half the fuss about any florists' flower? We who remember the days that are gone may well feel aggrieved at this, and can only look on to discover some glimmering streaks of the dawn of a better day; for, though modern gardeners contend that bedding-out requires so much knowledge of colours and skill, florista' flowers need an amount of patient watching, of skill, of constant attention, which on the whole tribe of bedding Pelargoniums, Verbenas, &c., would be thrown away. Hence on every side one hears, "We haven't time or space for growing florists' flowers;" "I have so many thousands of bedding plants to prepare and find room for, that really I cannot grow them as I used." So the demand for Pelargoniums, Dahlias, Pansies, &c., is every year decreasing, and, as a natural consequence, the raisers of seedlings fall off also. Let us hope that "there's a good time coming," when both objects may be attained.—D., *Deal.*

PEAS AND CABBAGES.

I WISH to say a little more about vegetables, which receive my greatest care, and I will begin with Peas. I have sown Sangster's No. 1, Daniel O'Rourke, and Dillistone's Early at the same time on the same piece of ground, and no one could tell the difference. Of the three, Dillistone's I thought was the best, lasting in crop the longest time. That was five years ago; last year I sowed some of Dickson's First and Best at the same time and on the same piece of ground as some of what I call Dillistone's Improved, for I have saved a few of the longest and best pods every year. Dickson's First and Best came in six days earlier, which is a great object where early Peas are in demand; but for a crop I should be sorry to give a preference to any of the sorts I have named over Dillistone's Early Improved. The pods are 4 inches long, well filled with peas as large as those produced by Bishop's Dwarf; but the soil and climate of different localities exercise a greater influence than I could have believed possible had I not lived in other counties. For instance, a crop of early Peas is often over in England in a fortnight; but here in beautiful Wales I have gathered for seven weeks from Peas which had first come into bearing in the end of June.

I saw by a late number that Messrs. Stuart & Mein recommend sowing Coleworts as soon as the weather and state of the ground will permit, in order to allow them time to make fine heads before the winter. I used to sow the seeds in the first week in April, but the plants were then always too forward for me. With every spare piece of ground cropped in March (for I must economise every yard of kitchen garden in order to supply a large family throughout the year with good vegetables, including Potatoes, from an acre of ground), Where am I to plant those early Greens? is a question I often ask myself. I must wait until the early Peas and Potatoes, Spinach, &c., come off, or plant between the rows, and this I often do. Accordingly I never sow my Coleworts, &c., until the second week in May, and I cut fine heads of the Ulm Savoy in the first week in October. The soil is very light, with a gravelly subsoil.—T. ELCOME, *Rhug Gardens, Corwen, North Wales.*

[Our correspondent, on again referring to Messrs. Stuart and Mein's communication, will perceive that their recommendation had reference to the different varieties of Sprouts, and more particularly to the Fearnought Cabbage.]

PEACH-TREE BUDS.

THERE are some Peach trees, like that most beautiful Nectarine the Elruge, which have abundance of bloom-buds, and leaf-buds always among them. There are others, like the Stanwick and the White Nectarine, where the blossom-buds are to the leaf-buds as fifty to one. Such trees soon grow out of bounds, and the shoots after a year or two are weak and spindly, unfit to carry fruit. Now, will Mr. Bréhaut tell me—First, What to do with an old tree of this kind? If the attenuated shoots are cut back they throw out no leaf-bud and the stumps die. Is it possible by cutting a straggling tree very closely all over to obtain a fresh sprinkling of shoots from the main stem? or is it the best plan to cut it down like a Fuchsia for one strong shoot from the base?

Secondly, It would be of still more service if Mr. Bréhaut would say how this superabundance of bloom may be prevented, or, in other words, how leaf-buds may be secured where they are wanted. We want two on each shoot, one at the extremity to feed this year's fruit, and this extreme bud you are sure of, if you have not in the preceding summer pinched your shoot too hard. It, however, you have pinched back so far as to take off a full-grown leaf, then in all probability you will have a naked branch of useless blossom, with even a bloom-bud at the top. This, however, may be prevented, as I have said; but another leaf-bud is wanted no less towards the base of the shoot, to grow into the replacing shoot of next year. This bud, perhaps, half the branches of the trees I have mentioned are without. Can any plan be suggested for securing this leaf-bud at the base? Will amputation early in the season of half the leaf which attends a bud? or will anything else have this effect upon it?—WYESIDE.

[It not being stated if the Peach trees in question are orchard house trees, or in a heated Peach-house, or on the open wall, it is difficult to deal with this subject except generally. The trees mentioned do not differ in their habit of growth so as naturally to produce the results stated. On the contrary, the Stanwick is here our very strongest Nectarine. Leaf-buds occur at the points of every one of the eight classes of Peach shoots, except in one case, that of "barren or blind spray." This is known by its single blossom-buds, slender habit, and dormant buds at the base. These last, in the Peach, are seldom developed after one season. Opinions differ whether to retain or cut away this class of shoot. All, however, agree that it is a sign of premature decay in the tree, however caused. As the trees are stated to be old, may not this, in part at least, account for their condition? Should they be old favourites, I cannot recommend their being wholly cut down. Doing so rarely succeeds, though the kind of stock they are on makes a difference. Rather encourage any strong wood-shoots, train them vertically, and as they are able to absorb the sap, cut away the older portions gradually this summer. If some fruit be desired (which is a pity), retain those clusters of bloom-buds without accompanying leaf-buds which lie close to the branches. They will bear and then dry up. An excellent way is to graft some young wood by herbaceous approach wherever possible. It is easy to do so in July, and the proceeding is very effectual in reforming a tree.

Leaf-buds are often wanting at the points even in the best pruning, with or without clusters of bloom. At the winter pruning it is not always easy to distinguish; even if left they are the most liable to be brushed off by contact with passers-

by. Sometimes they drop off from want of regular watering, or from attacks of aphides, &c. Who can tell us why they should occur in some places, and bloom-buds in others? M. Grin asserts that he can fix them at the base of spurs by bisecting the stipularies at the points of the shoots. I do not go so far, bnt venture to state, that if pruning by alternate shoots be practised (as recommended by me in the "Modern Peach-Pruner")—that is, if two shoots be left on each spur and these shoots be stopped at four leaves as soon as six full-sized leaves are developed, and the second growths at two more leaves as soon as four more leaves are seen, at the winter pruning an abundance of buds will be seen; and if then the best-looking shoot be left long to bear, and the other be cut to two wood-buds, or eyes, for succession, the want of terminal leaf-buds complained of by "Wyeside," is reduced to a minimum. You should always have two shoots on a spur.—T. Bréhaut.]

AVOIDING CUCUMBER FAILURES.

From the symptoms detailed by "An Old Subscriber," at page 86, I should be inclined to say that his Cucumbers are too wet at the root, or have too great a bulk of inert soil to grow in. It does not seem possible that they lack bottom heat. If this were the case, it would be a sufficient explanation of the failure. Cucumbers will certainly fail as detailed, let the bottom heat be never so well regulated, if the soil be sodden or effete. I hope your correspondent will forgive me, if I proceed "to lay down the law" rather confidently for the management of winter Cucumbers.

In the first place, I recommend his box for holding the soil to be of wood; the bottom of ours, two-inch plank, has lasted eight years. Secondly, The box should not be more than 18 inches wide, or at the very outside 2 feet. Thirdly, The depth of soil from September to February, should not exceed 9 inches. The reason for this is simply that the plants should at all times throughout the winter have a perfect command through the medium of their roots over the moisture in the soil, so as to necessitate watering twice a-week, or once at least.

Perhaps a few facts in illustration will assist your correspondent. From such a box, a section of which is just 18 inches square, and its length 40 feet, heated by one pipe, we have at all times abundance of Cucumbers. We have had plants for two years in bearing, the stem becoming as thick as a walking-stick, corrugated, and rough as cork. Plants turned out of pots in September have been bearing steadily since the first week in November; in fact, their fault is that they set too many fruit, if that which is so easily remedied be a fault. The plants in such a box are easily rested by being kept rather dry, and grow with fresh vigour when treated to plenty of water; they never go off as detailed by your correspondent, because the growth is firm and short-jointed. I may remark that our pit is a low one sunk in the ground, the glass very flat, and lean-to. Such, however, I do not by any means recommend; the sun scarcely ever strikes on the soil, which is a fault, no doubt, bnt cannot be remedied without considerable expense.

I am confident that more Cucumbers are unfruitful, and go off diseased in winter from the cause indicated, than from any other—namely, from having too large a bed of soil to grow in; and the remedy clearly is to grow them in narrower boxes with plenty of drainage, and the bottom heat unconfined—that is to say, ventilation must reach the roots. Although I have never been obliged to do so, I have no doubt but Cucumbers could be grown very successfully in pots in winter, because the roots could be kept together, and the plants would be completely under control.—W. D. Wynyard.

"An Old Subscriber's" Cucumbers appear to me to have failed owing to his allowing the border to become overcharged with hot steam from stagnant water in the tank, as well as from over-watering, and, it may be, allowing worms to breed in the border.

I do not like heated water under early Cucumbers. Two years ago I had some pits of Cucumbers in just such a condition as that which "An Old Subscriber" describes, the plants flagging and dying off, do what I would. I took the water out of the tank, lowered the temperature under the border, gave more heat above, and presently there was plenty of fruit. Last October we made up our bed for Cucumbers in a house 22 feet long by 12 wide; the border was covered with slate, on which was placed 9 inches of rubble, then some good thick sods, and above these 2 feet of compost. All went on well till the plants showed fruit, when they began dying back and flagging. We at once took out the border and found the sods on the rubble as full of water as they could well be. This was on account of their being too sun-dried to allow the water to drain off. We replaced them with new sods, repaired the border, and since then the plants have done well.

I should have mentioned that in consequence of the border being so saturated, the soil was full of worms, which rendered it too sour for any vegetation. To destroy them we water with a mixture of mustard and lime, which kills them at once, and does the plants good. If "An Old Subscriber" were to take the water out of his tank, lower the bottom heat to from 75° to 80°, and keep a top heat of between 80° and 85°, taking care at the same time that his border be properly drained, and the soil in a good, sweet condition, and free from worms, he will, I am sure, not complain long of so little success in the winter culture of the Cucumber.—Thomas East, *Wolveton House, Dorchester.*

I have witnessed in some of my plants the symptoms described by "An Old Subscriber," but at a different season. I have two houses in which I grow Cucumbers. One for early work is about 11 feet wide, 11 or 12 feet high at the back, and 4 feet high in the front, and is heated by hot water. In this house I have never witnessed the disease referred to. The other house is a low span-roof used for bedding plants in the spring, and planted with Cucumbers at the end of May. The Cucumbers receive very little heat except sun heat, of which I give them plenty. Now, in this house I have frequently seen the disease, from which the plants seldom recover. I ascribe its presence to the damp, stagnant state of the atmosphere in the house, while in the other case I think they are free from it, because the house is larger, and the circulation of air quicker; but I must say the house for early work is not a profitable one, because of the great amount of fuel it takes to heat it.—Ivo.

EARLY PEAS.

Your correspondent "Ronnoc," whatever may have been his intentions, must certainly have misled many readers of the Journal who have not tried our new Early Pea, had his reported trial and failure been permitted to pass unchallenged. We now discover, after reading his letter in the issue of February 28th, that from an imperfect knowledge of varieties he has confused our new "First Crop" Pea with an old variety introduced by us about sixteen years since, and then named "Carter's Earliest." Your correspondent, however, thought well to insert the word "first," making it read "Carter's First Early;" and as he does not inform us that the Peas he procured were in sealed packets, we can only conclude he was supplied with the old variety by his seedsmen. This sort we do not now maintain to be a first early, as there have been numerous improvements in early Peas since its introduction, but "Ronnoc" is again in error when he states the "quality" of our Pea to be inferior to Sangster's No. 1, as its general cultivation in preference to the last-named variety is abundant evidence of its superiority.—James Carter & Co.

My experience is very different from that of your correspondent "Ronnoc." I sowed on the same day Carter's First Crop, Dillistone's Early, and Sangster's No. 1 Peas side by side on just the same aspect as "Ronnoc," and Carter's First Crop was the first to bloom, and three days earlier to gather.—Caleb Silcock, *Gardener to T. Wardle, Esq., Macclesfield.*

CURRANT TREE CULTURE.

After reading the paper on Currant culture in a late number of the Journal, I think it may not be amiss to say a few words upon this subject for the benefit of young amateurs.

I have several standard Currant trees which for some years had borne either sparingly or not at all, and I had pretty well determined upon grubbing them up; but I thought I would give them another year's chance under different treatment, for it occurred to me that if Mr. Rivers's plan of summer-pinching as detailed in his "Miniature Fruit Garden" were so good for Apples, Pears, and Plums, why not also for the humbler Currant? Accordingly, throughout the summer of 1865 I kept them regularly pinched in strictly after Mr. Rivers's directions for the other trees named, and in 1866 I was fully rewarded for

my trouble, for anything more beautiful in the way of fruit-bearing than these hitherto-barren trees I have seldom looked upon. They were, both when in fruit and blossom, the admiration of all who saw them.

Since the pinching plan has been adopted upon the trees in question, no winter pruning has been necessary, and they are showing now every likelihood of being, with the permission of the sparrows and the spring frosts, as abundantly fruitful in 1867 as they were in 1866.—Beta.

In a communication from a correspondent signed "J. T.," on propagating and pruning Black Currants, I am not a little surprised to find him saying, "The Black Currant likes plenty of sun and air, and does not succeed so well as the Red Currant in the shade." So far from sun and air being indispensable for the successful cultivation of the Black Currant, and so far from its requiring in all cases the treatment which he describes, I give an instance to the contrary. The sun's rays never reach the Black Currant bushes planted in the orchard here, quite under the shade of Apple and Pear trees, from June, when the trees are in full leaf, until after the fruit is gathered, and all who see the produce declare they never saw such fine Black Currants. The bushes bear immense crops of large, equal-sized berries.

My object in bringing this fact under the notice of your readers is that they may be encouraged to plant any garden ground that may be shaded, with the utmost confidence of success.

It may interest your readers to know that plants of Cineraria maritima, without any protection, have withstood the late severe winter in an open border on the east coast of Scotland.—H. R., *Fife*.

CAUSE OF THE POTATO DISEASE.

I am fond of Roses, no one can be more so, and Mr. Radclyffe is fond of Roses; but, then, if he were to grow a multiplicity of Potatoes, he could not find sufficient room for Roses; and if I were to cultivate as many kinds of these as Mr. Radclyffe does, I could not find sufficient room to grow and study the more lowly, though valuable, Potato. I am no final-cause man either; to me it would be distressing not to think of beyond.

However, I am called upon by Mr. Radclyffe, at page 144, to enlighten him upon "the great mystery of the natural world;" but I wish he had deputed the task to more competent hands. I always held that the spot on the leaf was the cause of the gangrene in the tuber; but nature's laws generally admit of two methods of inquiry, philosophers call them Induction and Deduction—ways leading to the same end by different tracks.

In the first year of the disease I was living at Stanton Lacy, near Ludlow, and we had a large piece of ground planted with a then favourite Potato of mine, called the Birmingham Blue. I prided myself on the appearance of the crop, and had almost begun to calculate the money it would return in the shape of bacon when consumed by the pigs, when the lightning and the thunder came, and in a few days afterwards the tops of the Potatoes were black and offensive in their odour. From annual observation ever since, I have invariably found that the leaves of Potatoes show the fatal spot in close thundery weather; merely wet or damp weather does not cause the leaves to become affected, and I have never found the tubers diseased when the foliage has escaped being smitten by, as I believe, the electric fluid. For instance: last season the haulm of the Early Ten-week was ripe and gone before the lightning came, and although I allowed the crop to remain in the ground side by side with the other kinds to the last, not a single tuber became affected. The conductors were not there? Those which remained of the first-early Potatoes raised on warm beds, escaped also for the same reason. Not so the produce of the sample of the very same seed and sorts in the garden. Their tubers became affected more or less, as I have already stated, in consequence of the foliage being sufficiently immature and green to allow it to become stricken. I have always found it to be so, and this seems to me reasonable; for at the mid-state of growth the system is eager and susceptible, and the sap which feeds the roots then descends in its full flow; should it become vitiated at this time—it is at a mid-state that the disease shows itself—in the leaf, through the agency of some poisonous gas as yet unaccounted for in the atmosphere, the whole system of the plant and the tubers must become directly affected; and when the Potatoes are growing upon a wet undrained soil, or where raw manure is overstimulating their growth, so sure in those cases is destruction to be more fatal.

Now, as the Potato disease is sure to visit us annually more or less, and the later the better, and as it will ever be an impossibility for any chemical labour to prevent the atmosphere becoming charged with electricity, the wisest plan for us to act upon is to try and combat the disease by good cultivation. We must not give way to the too-common habit of allowing the soil to lie soddened, uncared for, and overrun with weeds and by all the children until the last moment in spring, when a hundred other matters require attention, to be then hurriedly and improperly dug, and to be planted in a similar manner. Worse still, the Potatoes themselves are too often subjected to a like carelesa treatment; they are, probably, kept in masses, heated, forced into germination, and deprived of their long premature shoots over and over again, till almost all the strength of the tubers is exhausted; then, as a final stroke, with some cruel crooked instrument, they are cut to pieces and placed along with raw manure in drills at planting, thus adding as it were insult to injury, and laying the surest foundation for disease that could possibly be thought of. Almost to a certainty it was this sort of ill-treatment which weakened the Potato in the first instance, and laid it open to attack. Eschew the practice as you would avoid the plague.

I may be thought to allow too much fancy to mix with my reason. I answer, that for the unknown phenomena of the disease the naturalist must sometimes theorise. If all the facts were known, nothing would be wanting but an appeal to reason. Imagination and appearances combined with experiment must be the landmarks, and this is the utmost I can offer by ways of elucidation. The cause will, doubtless, some day become scientifically known, be worked out in the chemist's laboratory, in the same way as hundreds of other hidden things in nature have been unfolded to us; and we need not consider it strange that this has not been done yet, for, to bring the matter home, it is not so very long since the real nature of glass and soap became understood through chemical investigations. Discoveries, too, are repeatedly made by men knowing nothing about chemistry.

I wish Mr. Radclyffe every success in his experiments with the dissolved vitriol, though I fear it will prove a failure in respect to eradicating the disease. No doubt it will kill the fungus on the tubers, and so it would on the leaf, though in my opinion the mischief is done before the fungus appears. I think the latter is an effect, and not a cause of the disease. Stephen's conclusions, however, are all true, except, perhaps, as regards the "skulkers." I should not feel so sure of them, and I do not like skulkers, but, honour to Stephen.

I will, in conclusion, quote a passage from a paper by Liebig (to whose writings and those of other scientific observers I am indebted for all my information relative to science), in the "Cornhill Magazine," where he refers to Schœnbein's discovery of ozonised oxygen. It will serve by analogy to support my idea of induction as regards the Potato disease. "Schœnbein had found that atmospheric air, when electrical sparks are passed through it, acquires new properties, the most noticeable of which consists in a most powerful affinity of its oxygen, to a degree hitherto unknown. In such air a number of bodies, such as silver, upon which oxygen in non-electrised air has no influence whatever, becomes oxidised. Now, the question is, How did Schœnbein arrive at the conclusion that phosphorus slowly burning in the air puts the air into the same state as the electrical spark? This conclusion was founded on the observation that electrised air smells like phosphorus, and, *vice versâ*, slowly burning phosphorus like electrised air. Furthermore, Schœnbein has discovered that the smelling matter possessed the oxidising effects. So the conclusion of the formation and existence of the same thing, the ozone, in two, according to their nature, totally different processes, originated in the observation of the same impression upon one of the senses, that of smell. If the leadership in this combination of ideas had been left to the understanding, the discovery most probably would not have been made, for the understanding would not have been able to reconcile these two facts—the formation of an agent possessing most powerful oxidising properties, through, or by the side of, a body as highly oxidisable as phosphorus."

Now, when I wrote to Mr. Gardner to come and see my Potatoes growing last season, I said, "Come quickly, as I seem to scent the disease in the air." My sense of smell is most acute; and in those seasons when crops have been much affected, a fortnight or so before the spotting of the leaves could be seen,

I have smelt the smell of electrised air most acutely. It appears to me, that the next thing necessary to arrive at the truth, would be to analyse the air when it is charged with electricity, at an early stage—when the leaves begin to show disease. It may be only the phosphorus that one smells; and is phosphorne an agent like electricity, to do deadly work upon the growing crops of Potatoes? It is known that electricity co-operates in the formation of rust upon iron exposed to moist air.—Upwards and Onwards.

[The foregoing is all ingenious; but how can the fact be disposed of, that Potatoes have been exposed to the same electric influences for centuries, yet the disease only appeared about twenty years since?—Eds.]

DISA GRANDIFLORA.

Having grown this lovely Orchid for some years I was, I confess, terribly taken aback by the statement in the Journal of February 21st, that Major Trevor Clarke had found it to be hardy. The note in the following number correcting the statement explains it. However, let me add that although not hardy, it will bear not only anything short of frost, but even a degree or two of frost without injury. My plants were this winter growing in a greenhouse with Pelargoniums, &c., and the first night of frost came so unexpectedly on us here that I did not light my fire. In the morning I was in a grievous fright, for, as I keep the Disas very wet, I expected to find them severely injured if not killed. The leaves were partly frozen I saw at once. However, I immediately covered up the house and set the fire going, and to my satisfaction found that, with the exception of a very slight scorching, they were all right. I have heard even lately one of our most successful plantsmen say that he found this a difficult plant to manage. I find it very easy. It requires light, air, plenty of moisture, and the very coolest of cool treatment.—D., *Deal.*

THE INTENSE COLD AND ITS CONSEQUENCES.

Derby.—The following plants have suffered here from the effects of the January frosts:—Ceanothus azureus, Garrya elliptica, both on a south wall, Golden Queen Holly, and Abies Albertiana, slightly touched. Our Roses are on their own roots, and pegged down; they were well covered with snow, so escaped injury. The Broccolis destroyed are Snow's Winter White, Grange's Autumn Cape, and Penzance. Later sorts have stood well. Cabbages, Savoys, and other Winter Greens are mostly killed. 24° below freezing was the minimum temperature registered here, the thermometer being placed 3 feet from the ground in a north aspect.—Charles Coombs, *The Gardens, Broadsall Priory.*

Ilford, Essex.—I send you, now that the damage can be more correctly ascertained, an account of some of the effects of the intense frost at this place. I am sorry that I cannot state the lowest temperature on the nights in which the cold was greatest, as the registering thermometer ceased to act correctly. We are nine miles from London, and about one mile from the Thames, on the north side; the situation is much exposed, and yet vegetation has not suffered to the extent that it has done in other parts in the neighbourhood of London.

Common Bays are scarcely touched, while at other places where I have been every leaf is browned above the snow line. The Sweet Bays in exposed places are very much injured, but in more sheltered situations they have suffered only very slightly. I am pleased with the appearance of the Aucuba japonica; a large plant fully exposed had berries on it which were quite green when the frost came, and I made sure that they would never colour; but they have changed to red, and are at this moment quite sound. I will send you a cluster or two, so that you may judge by their appearance of their capability of withstanding frost. I have never observed the birds attack the berries, although there are legions of sparrows, but other birds are scarce.

Amongst Tea Roses killed are Devoniensis, Canary, Madame Falcot, Adam, Souvenir d'un Ami, Maréchal Neil, and Vicomtesse de Cazes, as standards. Gloire de Dijon is the only standard Tea-scented Rose alive; Solfaterre (Noisette), a favourite Rose as a standard here, is dead; Celine Forestier (Noisette), as a standard, is safe. I pruned all the Hybrid Perpetuals this week, and found the wood largely discoloured just under the bark in numbers of them. Some of the more weakly and delicate sorts grown as standards are quite dead. I planted a bed of dwarf plants consisting of new varieties only a week before the frost, and none of them are touched. They were grafted on the Manetti stock planted up to the union, and afterwards mulched with half-rotten dung.

In the unheated orchard-house the roots of the fruit trees were made safe by being entirely covered with cocoa-nut waste. The pots were plunged to the rim before the frost, but to make all secure, a quantity of fibre was placed over the roots to the depth of 3 inches. Two large Aloes about forty years old in the house are very much injured; the young leaves are beginning to decay at the base and to fall over. In the kitchen-garden quarters the white Broccoli is entirely destroyed, and part of the Sprouting. A number of young plants of Pinus insignis in a sheltered corner are much cut up; other coniferous trees are safe, and most of them as green as they were before the frost came.—J. Douglas, *Loxford Hall.*

TIME REQUIRED FOR RIPENING GRAPES.

I wish to know if a certain given time should always be completed from the time of commencing to force until the Grapes should be ready for eating?

I have studied the "Vine-Manual," which proceeds from your office, and have recommended my man to go entirely by it; but I find that he, who has had charge of houses in this island (Jersey) for some years, is inclined to use a much higher temperature throughout, and last year he forced the Grapes in four months only. Also, provided sufficient heating power is attainable, should there be any difference in the length of time used for forcing Vines—say, in the north of Scotland and in the island of Jersey?—H. W.

[We incline to the opinion, that Vines will be forced in a shorter time in Jersey than in the north of Scotland, but we have had no experience in Jersey. In the higher temperature the Grapes will come a little sooner to maturity, but we consider at the expense of two losses, the use of more fuel to attain the higher temperature and the earlier exhaustion of the Vines. We should be obliged by statements of the experience of some of our Vine-cultivators.]

NOTES AND GLEANINGS.

We have been requested to state that the note inadvertently appended to the schedule of the Bury Show, which states that the prizes offered as cups, &c., may in some cases be received in money, was inserted in error, and that there is no intention of such an arrangement being carried ont. It is quite natural that those who give cups and other objects as prizes should wish that these should form more lasting memorials of the event than mere money prizes can; and we conceive that the prizes arranged in some conspicuous position in the Show would form no insignificant feature both of beauty and of interest in the Exhibition. As we understand many of the prizes are already purchased, it would add much to the interest attaching to them, were they to be exhibited in a group at one of the exhibitions of the Royal Horticultural Society in London during the season.

—— A work that has run through so many editions as Mr. Rivers's "Rose Amateur's Guide," does not require any further notice than the mere fact, that the ninth has just been issued; and we have no doubt but this new edition of a work which has contributed so much pleasure and instruction to so large a class of readers will meet with as great success and as hearty a welcome as its predecessors have done.

—— Mr. John Haythorn, late of Wollaton, died at Nottingham on Sunday, the 10th inst., aged 85 years. The deceased was head gardener to three Lords Middleton at Wollaton Park, near Nottingham. He was a Corresponding Member of the Royal Horticultural Society, and for several years a subscriber to the Gardeners' Benevolent Institution. Ten years ago he left Wollaton, and has since resided at Nottingham, and died there at the house of his eldest son, the manufacturer of hexagon net. He was married more than sixty years, and survived his wife only twenty weeks. He was the father of eleven children, of whom five only are living. His sixth son, the Rev. Francis Haythorn, was curate at Leiston a short time before he died.

—— On the evening of the 6th inst. a deputation waited on Mr. Simpson, gardener to Lady Maria Molyneux, Stoke Farm, Slough, and, in the name of the young men who had served

under his charge, presented him with a handsome microscope. In handing it over to him the deputation expressed the very great pleasure which they felt in thus testifying the high esteem in which Mr. Simpson is held by the gardeners who have served under him, and their appreciation of his worth as a horticulturist. Mr. Simpson returned thanks to the deputation, and, through them, to the absent subscribers for their kind attention, and he hoped by the faithful discharge of his duty towards his men to perpetuate the good feeling manifested in the valuable and much-valued gift.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, sow and plant if new beds are required; the beds should run east and west, for more heat will be thrown into them by the full exposure of one side to the noonday sun than would otherwise be the case. *Artichokes* (Globe), prepare a fresh plantation, if necessary, by deep trenching and high manuring, for if encouraged in this way they will continue, by judicious thinning, much longer in bearing. *Broccoli*, where any late spring Broccoli has escaped the general destruction, a portion may be taken up and forced in frames, in order that at least an occasional supply may be obtained during the long period of deficiency which must otherwise ensue. *Cauliflowers*, every means must likewise be adopted to forward them; those planted under hand-lights will derive some advantage from the protection of a mat in frosty nights. Where hand-lights cannot be afforded, flower-pots should be inverted over the plants at night. After planting out the winter Cauliflowers there generally remain a number of small plants—these, if pricked out in a cool and shady border, on rich soil, will form a succession, and serve as the connecting link between the principal winter plants and the spring-sown ones. *Cabbage*, let the soil be frequently stirred between the rows of young plants, and plant out from those sown in the autumn. *Carrots*, if the ground be in a fit state, sow the principal crops, and they are best in drills, not only as regards their growth, but also on account of the facility of hoeing and weeding. *Lettuces*, keep up a succession, and those in boxes in heat should be pricked out in a warm situation, in highly manured ground. *Onions*, transplant, taking care that no part of their stems is below the surface. Silver-skinned Onions should now be sown for pickling, the poorest soil in the garden is the fittest; work it when dry, throw it into high beds—the higher the better—and, after sowing thickly, tread it as hard as a turnpike-road, if possible. *Peas*, examine previous sowings, in case of injury from frost, for there is a particular period of their germination in which they are easily injured, as is the case with many plants in other respects sufficiently hardy. Successional sowings will require to be made. Sow, also, a few *Brussels Sprouts* for early use, *Cabbages*, *Cauliflowers* for a late crop, *Kidney Beans*, *Lettuces*, *Spinach*, *Celery* and *Celeriac*, *Parsley*, *Radishes*, and *Leeks* for transplanting.

FRUIT GARDEN.

Finish off the nailing of wall trees, and protect all as far as possible. Tie down a number of the weak and short-jointed branches of Pears and Plums on walls or dwarf espaliers. This will be found much better than the old or spurring-back method. In the meantime cut away all over-luxuriant wood close to the stem. Destroy all insects before the trees bud. Clear away all scale, &c., using a wash composed chiefly of clay, water, and sulphur on trees liable to insects. Proceed with the grafting of Plum, Cherry, Pear, and Apple trees, unless frosts are so severe as to cause the loosening of the clay. The latter will rarely drop off if the matting or bandage be well smeared over with a little grafting-clay before the ball of this substance be applied. Top-dress Hautbois Strawberries in beds, also other kinds where the ground is somewhat exhausted, as soon as the old leaves are cut away and the plants thoroughly dressed.

FLOWER GARDEN.

If Briars are required for budding Roses on, they should now be collected, trimmed, and planted in a reserve garden, or where they are wanted to stand for summer budding. All turfing, &c., should now be finished as soon as possible. Continue the pruning of shrubs, Roses, &c. When bulbs are making their appearance, the surface should be carefully loosened if the weather continues dry and free from frost. Lawns, or portions of them, having a hungry sandy soil, and liable to "burn," should have a slight dressing of some kind every spring; even common soil will benefit them, as it induces another tier—if I may be fallowed the term—of surface roots, of course increasing their volume. However, a dressing of marly or clayey soil in a highly pulverised state would obviate the tendency to burn. A slight dressing of guano has an excellent effect in such a case. Those who desire to have Moss and Provence Roses throughout the summer should now cut back a portion for that purpose, merely pruning away the parts which have budded. Superfluous suckers of Roses, Lilacs, &c., may be removed and planted out for successional stock, and the old stock of Roses richly top-dressed.

GREENHOUSE AND CONSERVATORY.

At no period of the year, perhaps, is caution in the use of fire heat more needed than in the month of March. March winds are proverbial, and March suns are at times intensely bright. Now, as these winds are by no means to be desired in hothouses, the very best plan is to keep fire heat to the lowest possible pitch all the morning, and when forcing is going on to have a lively fire for a couple of hours in the afternoon—say from three o'clock until five. By these means the necessity of giving much air will be obviated, and the climate within maintained in a most wholesome state as regards moisture, &c. Frequent attention is necessary at this period, both to the giving of air and also to the taking it away gradually. A considerable reduction should soon be made in forcing-houses, and the whole should be taken entirely away as soon as it is considered safe. Canvas shading will be in great requisition also. Conservatory plants to be retarded, Camellias making growth. Pines in a delicate state at the root, whether from disrooting or otherwise, and even the late Vines swelling their buds, will be benefited by a little shade during bright sunshine. In the conservatory, shading will now be of the utmost importance. Camellias growing should be so placed as to receive more shade as well as more atmospheric moisture than the general inmates of this house. They are, in fact, far better in a little close house by themselves, which should be kept up to 70° by day and 60° by night, receiving much the same treatment as Orchids at this period. Large specimens of Fuchsias should now receive liberal shifts; in fact, with well-regulated potting, and thorough drainage, they should be placed in their final pots or tubs at once. Now is a good time to sow imported or home-saved seeds of tropical plants. Half fill the pots with drainage; use peat, loam, and silver sand in equal parts; water the soil thoroughly but slowly with a fine-rosed pot, and cover the surface with a good coat of sphagnum. They may be placed on a warm shelf in the shaded part of the greenhouse. Some of the growing Ericas may be shifted now; use abundance of drainage and sandy heath soil full of fibres, thrust it in lumps round the ball, now and then forcing down pieces of stone or lumps of charcoal, and finally coat over the surface with some of the finer portions of the soil, which should have a liberal amount of sand. The ball must be moderately moist before shifting, for if thoroughly dry no after-watering can bring it right. Pot Cape or other bulbs as soon as the foliage is becoming strong, use chiefly loam, leaf soil, and silver sand. Dress Pelargoniums, and stake them out; slip off all inferior or ill-placed shoots, and make cuttings of them, they will flower well during the autumn. Lisianthus Russellianus should now have a liberal shift, with much drainage, and should be placed in pans of water in a Cucumber-frame, or other situation where there is a moist heat. Attend well to watering. Be shy, however, in watering newly-shifted plants. Do not water these heavily, give them a little and frequently through a rosed watering-pot until they become well rooted.

STOVE.

Growing Orchids will now require shading for a couple of hours during bright sunshine, for fear of too copious a perspiration; also in order to retard Dendrobiums, &c., in blossom. The latter, however, will do extremely well in a dry, warm parlour, or drawing-room, only they will require a good watering at the root occasionally. A very moderate amount of atmospheric moisture will suffice for these plants when in flower. The growing specimens must at this period have a considerable increase in this respect.

PITS AND FRAMES.

Much is now required here. Put in cuttings of everything that is likely to be wanted for spring planting. A mild frame heat is the most suitable for striking in. Bell-glasses are not required at this season, but shade slightly in the middle of the day. Pot-off struck cuttings as fast as room can be made by removing the more hardy kinds to colder situations, to harden off for the first planting. Pot-off Ten-week Stocks, and

other hardy annuals as soon as they are ready, and continue to sow seeds of all kinds of annuals that are most wanted, the more hardy kinds in beds or borders under hand-glasses.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

For general details see last week. In addition, our chief work out of doors was Potato planting in the driest days. Planted the earth-pit, which, prepared as previously described, was in excellent condition, and the Potatoes were also in a good state for planting, being sprung about 2 inches, and had plenty of leaf mould about their roots, as the sets, mostly whole, had been set on shallow wooden boxes with leaf mould about them. As the open ground was not in first-rate order for Potatoes, except where it was well aired and dry, as at the foot of walls, we spread a little light dry soil and ashes and a little lime over the sets.

Peas.—Planted a row of Dillistone's Early and a kind with a local name, but almost if not quite identical, near the front of our two orchard-houses, the Peas turned out from semicircular drain-tiles, and placed about a yard from the front of the house. These are growing as if they had never been removed. In one house we had to take up a row of Lettuce, nearly half grown, in order to make room for the Peas, and planted the Lettuces with balls out of doors. There is a row of good-sized Lettuces behind the Peas, another row in front of them, and then a row of Parsley, that has done good service this winter. The Lettuces will soon be out of the way of the Peas, and by the time the latter need more room the Parsley will be of little value, as the plants out of doors will be growing freely by that time. Nothing will be done with these Peas but running a line along the back of the row, or some low twiggy sticks, to prevent the Peas leaning inwards to the house, the object being to encourage them to grow and cover the ground to the front of the house, the wooden ventilator being only a few inches above the ground level. We have had fine early gatherings with little trouble by this mode, the flowers and the pods standing well above the foliage and recumbent stems. We think it may be useful to some to say, that after trying a number of sorts for this purpose we have found none so good as Dillistone's Early, which, thus protected by a roof of glass, pods freely, whilst other early sorts, even Sangster's No. 1, podded but indifferently, though in general it far exceeds Dillistone's in produce out of doors, but is usually three or four days later. We have also placed in one house a row of Tom Thumb in pots close to the back wall. These Peas generally do well; but when of the same age as Dillistone's they will not be so early. Their dwarfness is a great recommendation for such positions, and for growing in frames or pits. They stand a moderate heat well, and succeed admirably in well-aired soil with the protection of sashes, the air removed early in the afternoon. We prefer them in pots at the back of an orchard-house or late Peach-house to planting them out near the trees, as, to make them succeed well, the ground would require to be more deeply stirred than we would like for the trees, and if planted on shallow-stirred soil they are subject to fly and mildew. They are also rather impatient of the syringing with different waters which the trees may require after the fruit is fairly set, and when in pots they may be lifted out of the way until the syringing is over.

The weather has been cold enough, and the ground has been too wet and unkind yet for turning out other Peas in tiles and turf, protecting and staking as we go on; but these are being hardened off to be ready as soon as the ground shall be in better condition. This plan, though involving a little more labour now, saves much seed, as well as looking after slugs and mice in winter.

In one of the driest days of last week sowed a piece of Peas and Broad Beans, the Peas fully 5 feet apart from row to row, and the garden Beans between them, the Peas being moderate growers. Taught by pheasants and partridges last year, we ran some hooped wood on each side of the piece sown, with a row of similar hoops in the middle, and then strained a piece of cord netting all over, fixed the net all round, and as yet the depredators have obtained no entrance.

We lately alluded to a first-rate, small-meshed, Pea-guard. Having used some two-inch-mesh galvanised wire netting, as advertised in the Journal, for keeping out rabbits, &c., and a little of it being left, we mean to bend its two-feet width into a semicircular shape, and fix it at each side with pins over a row of Peas, and we feel confident that, though the mesh will not keep out small birds, it will prevent such wholesale pilferers as pheasants attacking the Peas. The meshes will let the head and neck of the pheasant in, and there will be no danger of the bird being hanged, but the shoulders will prevent its reaching the Peas. We would, however, prefer the Pea-guards alluded to.

FRUIT DEPARTMENT.

Proceeded with pruning and nailing in the most favourable days, and especially when there was any sun, as it was easy to vary the position. We have not yet done with the Peaches and Apricots. The latter are freely swelling their flower-buds, but none are open yet, and we wish to keep them back, as March is yet young, but we have a lot of Laurel branches ready to place against them if we should have a severe night. Had we a cloth we would cover at present on every sunny day, and uncover in all weather not very frosty, until the blossom-buds began to open. The great advantage of a cloth for Apricots is that the blossom can be kept dry in cold sleety weather. The blossom if dry will stand a considerable degree of frost. Even a rather close net will do good, as the rain is caught in the net without freely reaching the wall. Laurel twigs used rather thinly make a fair protection when litter is not to be had.

Orchard-houses.—Had these cleaned out, as alluded to the other week, removing the litter that had been used for covering the pots, and taking off about half an inch of the dry surface soil, chiefly as a precautionary measure; slightly broke the surface with the points of a steel fork, gave a dressing all over of decayed Mushroom-bed manure that had been long enough exposed to kill every particle of spawn, and to make sure, as well as to help to enrich, mixed with it a bushel of soot and a bushel of quicklime, the latter settling any worms that might be present; patted this down, and then covered with a slight casing of fresh loam, the pots being also fresh surfaced to make all look well. Here we are reminded of a few matters we could not enter into last week.

1st, With regard to the firmness or looseness of soil about the roots of fruit trees in general and of Peach trees in particular. Could we always have our way we would prefer, after the trees had grown enough to be and continue to be fruitful, that the soil about the roots should be firm: hence, but for the necessity of watering and keeping the soil moist enough, we would not break even the surface often; but for such purposes breaking the surface is necessary, and then the manuring material being put on the surface, the water passes through it to the roots, which are thus encouraged to turn their mouths nearer to the atmosphere. Just as with propriety we make the soil firm in the pots for fruit trees thus grown, so on the same principle it holds that trees planted out should have their roots equally firmly packed. Why, even with a Cabbage plant, if we wish it to grow very fast we keep loosening and airing the soil about it, and giving it as much moisture, &c., as it can take in; but if we wished it to bloom and produce seed as soon as possible, we would beat the soil closely and firmly about the roots.

2nd, It is very mortifying, but yet it is very necessary, that gardeners who attempt to write for the pleasure and the profit of others should be obliged too often to say, "Do not always do as I do, but do as I tell you;" and consistently enough too, as circumstances may often be too strong for permitting the development of the intelligence gained in the school of experience. Thus, with a want of consistency, we have been telling of planting Potatoes at the foot of walls; lately of covering a bed of Endive in front of such a wall; now of planting out Peas, and of Lettuces in an orchard-house; and in addition all the fruit-tree borders will most likely be cropped. Now all this is done by hundreds of gardeners who would rather do otherwise if they could—and why? because they never have too much from the ground, crop as they may, and these borders in front of walls are so well protected. It has often seemed to us a strange anomaly, that a gentleman who lays no great store on his land, and lets it at 25*s.* or 30*s.* per acre, though such land generally carries no more than one crop in the season, should expect such wonders in the way of produce, and so many crops in a season from an acre or two of land which is called the garden. We would not advocate large walled gardens if much of the commoner produce were cultivated in fields, for then fruit-tree borders might be left to the fruit trees, and if that even could not be, then it would be better in every way that these borders should be cropped, and the roots of the trees confined to a space 5 or 6 feet from the wall where surface-dressings could be given, and the soil kept

firm without repeated diggings and trenchings for vegetable crops.

3rd, As frequently stated, we have no objection to fruit trees in pots. It is an interesting mode for having good, compact, fruitful bushes or pyramids of Cherries, Plums, and even Peaches; but what we chiefly object to is the trouble and labour they occasion in watering. Our houses are lean-to's, with trees against the back wall planted out in the usual way, and trees in pots in the front of the house. Now, as a mere matter of economy in labour, we would prefer, as there are trees on the back wall, that there should be trees planted not far from the front, and trained on a rounded trellis high enough to permit the sun to reach the bottom of the back wall. Then, too, we could have the floor of the house at liberty in winter and spring. True, we could gain that object to a great extent now, by taking out the hardier trees in pots, and packing the pots in litter out of doors all the winter, or even placing them closely together at one end of the house; but either of these operations requires time and labour to move and move again the plants; and from a scarcity of that time the pots often remain in their places all the winter, being merely lifted up in the autumn to break off all roots that may have extended themselves beyond the pots. Now, judging from the way large Lettuces stood in these orchard-houses with just a sprinkling of hay over them in the most severe frosts, and how dry and comfortable such salading, Cauliflowers laid in in moss or litter, and hundreds or thousands of Strawberry-pots could stand secure in the wettest and coldest weather on the floor of such a house, additional reasons will be apparent for having the trees planted out instead of in pots; still, for all amateurs who have little room, who wish much variety in it, and who will feel a pleasure in attending to the wants of their favourite trees, the culture of fruit trees in pots will always be attended with great zest and pleasure. After a fair trial we have no fault to find with the system but the additional labour in watering, the greater attention required to avoid dryness, and either the extra labour or the extra room taken up in winter, when the other plan of planting out would leave the floor free for several purposes, such as forwarding many vegetables, as Peas, Potatoes, Kidney Beans, &c., in tiles, turves, and pots, before planting out in fine weather.

Vine-borders.—The cold wet weather having cooled and wetted the slight covering of litter and leaves, we put on about 8 or 10 inches of hot tree leaves next the ground, placing the colder on the surface, but collecting most of the litter previously employed into a ridge 2 feet wide back and front, and about a foot or 15 inches higher than the bed in the middle. On these ridges flat rails were placed longitudinally, on which old sashes rested back and front. The mild heat beneath the sashes will be taken advantage of for potting off lots of bedding Pelargoniums, or rather for fixing them singly in pieces of turf 3 inches square and 2 inches deep, the hole cut out being filled with light rich soil.

ORNAMENTAL DEPARTMENT.

Rolled the lawn, switched walks, turned over ridged-up beds and borders, potted plants, made cuttings, hardened off cuttings, took flowering plants to conservatory, and in such cold winds gave but little air, and as little firing as was necessary to keep plants healthy. A little air constantly or early given is better than open lights in such biting north winds.—R. F.

COVENT GARDEN MARKET.—March 13.

Supply, demand, and quotations remain unaltered.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes ..... each	0	6	to	0	8	Leeks ..... bunch	0	6	to	0	0
Asparagus .... bundle	8	0		12	0	Lettuce ..... per doz.	2	0		3	0
Beans, Kidney, per 100	3	0		4	0	Mushrooms .... pottle	1	0		2	0
Scarlet Run. ½ sieve	0	0		0	0	Mustd. & Cress, punnet	0	2		0	0
Beet, Red..... doz.	2	0		3	0	Onions.... per busbel	4	0		5	0
Broccoli ..... bundle	2	0		3	0	Parsley.....per sieve	4	0		6	0
Brus. Sprouts ½ sieve	3	6		0	0	Parsnips ..... doz.	0	9		1	3
Cabbage ..... doz.	2	0		3	0	Peas..... per quart	0	0		0	0
Capsicums..... 100	0	0		0	0	Potatoes ..... bushel	4	0		6	0
Carrots..... bunch	0	6		0	8	Kidney ..... do.	5	0		6	0
Cauliflower ..... doz.	4	0		8	0	Radishes doz. bunches	1	0		1	6
Celery ..... bundle	2	0		3	0	Rhubarb ..... bundle	0	9		1	0
Cucumbers..... each	2	0		3	0	Savoys ..... doz.	3	0		4	9
pickling .... doz.	0	0		0	0	Sea-kale ..... basket	2	0		3	0
Endive ..... doz.	2	0		0	0	Shallots ..... lb.	0	8		0	0
Fennel ..... bunch	0	3		0	0	Spinach ..... bushel	5	0		0	0
Garlic ..... lb.	0	8		1	0	Tomatoes.... per doz.	4	0		0	0
Herbs ..... bunch	0	3		0	0	Turnips ..... bunch	0	6		0	0
Horseradish .. bundle	4	0		6	0	Vegetable Marrows dz.	0	0		0	0

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples ..... ½ sieve	2	0	to	3	0	Melons..... each	2	0	to	4	0
Apricots ..... doz	0	0		0	0	Nectarines ..... doz.	0	0		0	0
Cherries ..... lb.	0	0		0	0	Oranges 100	5	0		10	0
Chestnuts ..... bush.	10	0		18	0	Peaches.....doz.	0	0		0	0
Currants..... ½ sieve	0	0		0	0	Pears (dessert) .. doz.	3	0		6	0
Black ..... do.	0	0		0	0	kitchen..... doz.	2	0		4	0
Figs ..... doz.	0	0		0	0	Pine Apples ..... lb.	4	0		8	0
Filberts.....lb.	0	0		0	0	Plums ..... ½ sieve	0	0		0	0
Cobs.....lb.	0	9		1	0	Quinces ..... doz.	0	0		0	0
Gooseberries .. quart	0	0		0	0	Raspberries.....lb.	0	0		0	0
Grapes, Hothouse..lb.	6	0		10	0	Strawberries..... oz.	3	6		5	0
Lemons 100	5	0		10	0	Walnuts..... bush.	10	0		20	0

TRADE CATALOGUES RECEIVED.

William Paul, Paul's Nurseries, Waltham Cross, London, N.—*Catalogue of New Roses, Beaton's Hybrid and other Geraniums, Hollyhocks, &c.* Also, *Plate of Village Maid Pelargonium*, a beautiful Nosegay variety.

John Bruce & Co., 52, King Street, Hamilton, Canada West. *Descriptive Catalogue of Seeds for the Farm, the Kitchen Garden, and the Flower Garden.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Letters not Prepaid.—We have so many of these that we are obliged to decline receiving them; so the writers of them will understand the reason of their being unanswered.

Books (*A Four-years Reader*).—It is published by Messrs. Houlston and Wright, Paternoster Row, London. (*Brown*).—You can have "Out-door Gardening" free by post from our office if you enclose twenty postage stamps with your address.

Extent of Piping Required (*C. W.*).—You would require for a span-roofed iron conservatory, one end glass, 25 feet by 15, height from ground to apex of roof 15 feet, and the roof curvilinear, at least two four-inch pipes all round the house, or three on each of the sides.

Renovating Old Vines (*A Subscriber for Many Years*).—What you propose doing is good, but you should lose no time in performing the lime-washing, and in thoroughly cleaning the house. To the lime you may add one-third its bulk of flowers of sulphur before forming the wash. This may help to prevent attacks of red spider. We would advise you to remove the old soil to the depth named, or even deeper if it can be done without injuring the roots, and then to point-in the crushed bones and lime rubbish, and cover the border with 6 inches of fresh soil. The best is turf, 2 or 3 inches thick, chopped with a spade in its fresh state, mixed with one-fourth lime rubbish, and one-sixth crushed bones. The turf should be from a good loamy soil. If you could cover the border with 18 inches or 2 feet of hot stable manure, it would tend to attract the roots upwards and make them active in the new material. It may be removed in May.

Hotbed Making (*Inquirer*).—Mark out a space a foot wider than the frame all round, place a layer of long litter on the bottom, mix the hops and stable manure together and put them in layers, shaking out and beating well down as the work proceeds, until you have made a bed a yard high. Put on the frame, close the lights, and in a week the bed will have heated. Take off the lights, level the bed, and if it is very hot put on the lights, but leave them open a little at the back. Thrust a stick about a yard long into the centre of the bed from the outside under the frame, and by drawing this out you will on feeling it ascertain when to cover the dung with 3 inches of sand. The time to do so is as soon as the stick can be held tightly in the hand. The bed should be levelled before putting in the sand, which will keep down the rankness of the bed. The temperature within the frame should range from 65° to 75°, and in this the cuttings will strike in ten days or a fortnight. If you have sawdust you may put in 6 inches of it, and in that plunge the pots of cuttings, taking care that the heat is not greater than the hand can bear when thrust into the sawdust and kept there a few minutes. If so hot that the hand has to be withdrawn the pots or pans must not be plunged, but should be set on the material. Shade from bright sun, and keep moist but not very wet.

Lilium auratum (*E. M. B.*).—You will see the information you ask for in an answer to a correspondent last week. To write on Lilies generally would occupy pages of our Journal, which we cannot spare just now.

Rain Water Becoming Hard (*G. B.*).—If it does become hard, but which is improbable, it must be from the lime, or salts of lime, which it dissolves from the bricks and cement. Exclusion of air from the tank would not cause hardness.

Boiler Heated by Gas (*P. K.*).—A cast-iron boiler will be durable. The sulphurous acid in the gas, if not much purer than it usually is, would corrode the bottom of the boiler outside as you describe.

Pea Protectors.—"Your correspondent, 'R. F.,' in 'Doings of the Last Week,' lately asked a question about Pea protectors. I have tried them and found them answer as an effectual protection from sparrows, which are sure to attack Peas as soon as they appear above ground. The protectors are made of galvanised wire, twenty meshes to the foot, and are 8 inches wide, and 5 inches high. Enough protectors are required for one sowing, and as soon as the plants have grown an inch or two high the protectors may be moved to the next sowing, which will be coming through the ground. As soon as the protectors are moved away from the Peas these ought to be staked, as the birds will then not be so apt to attack them.—J. Douglas."

Ants in a Peach-house (*C. B.*).—They are driven away by sprinkling a little guano over their haunts, or by watering those haunts with ammoniacal liquor from the gasworks. Either of the applications must be repeated daily until the ants have departed.

Tricoloured Pelargonium Leaves (*E. S.*).—Nos. 5 and 3 are of unusual colours, but 5 is by much the most richly and peculiarly coloured—one-half dark green ground, the other half yellow ground, and each with the scarlet and other markings, the midrib exactly dividing the special colouring.

Deodorising Night Soil (*A Florists' Flower*).—No chemical mixture is needed. Cover it over with earth immediately; earth is the most effective of deodorisers. Sulphate of iron mixed with night soil, and used as a liquid manure, will not injure your Roses and Pansies. The other chemicals which you mention would kill or seriously injure plants.

Grafting Weeping Ash (*R. H. A.*).—The best time to graft stocks of the common Ash with scions of the Weeping Ash is when the buds of the stock begin to grow. Grafting may, however, be done when the sap is flowing freely, which will be the case by the end of April or early in May.

Marrow Peas for August or Beginning of September (*Idem*).—You should make a sowing of Ne Plus Ultra in the third week in May, or if your soil is heavy a week earlier. To make certain, when everything depends on the weather, you should sow Ne Plus Ultra in the second week in May, and in ten days make a sowing of Ne Plus Ultra and British Queen. The above are tall growers (6 to 7 feet) in good soil; if you wish for dwarfer sorts, then sow Veitch's Perfection, Yorkshire Hero, and Hairs' Dwarf Mammoth. The ground should be in good heart.

Pruning Old Vine (*J. W.*).—Your old Vine with shoots 6 or 7 feet long should be at once pruned. If the stem is very old, and one of the long shoots come from it at the bottom of the rafter, we would cut away the old stem to within a short distance of the point from which the shoot takes its rise, pare the stem smooth, and cover it with Thomson's styptic to stop the bleeding that must follow pruning at this season. We would leave the shoot at its full length, bending it down in front of the house to induce the eyes to break throughout its full length, and when these are a few inches long we would tie it to the wire, and the shoots right and left of it, stopping them one joint above the fruit, or if there were none at the sixth joint or leaf, a strong shoot from the upper part being retained as a leader. If there is no eligible shoot from the bottom, prune the long shoots to two eyes, and you will, if the wood has been well ripened, probably have fruit this season.

Yucca Drooping (*A Subscriber*).—The lower leaves of the plants droop from the exposure of the roots to the drying influence of the atmosphere. Water it, giving it a thorough soaking, and place it outside, the tub being protected from frost and the air by plunging, or by placing some material around it.

Beurré Claimgeau Pear (*S. S. S.*).—You can have it from any of the large nurserymen near London.

Angle of Vinery Roof (*G. P.*).—There is no better general angle for the roof of a house than 45°, which does well for early, late, and intermediate crops. When vineries have flat roofs, as in lofty houses, with upright glass in front, the upright glass compensates for the flatness of the roof, receiving, as the upright glass does, the rays of light almost perpendicularly in the early and late months of the year.

Vegetable Marrow Raising (*S. M.*).—It is too early to sow seeds of this plant in the open ground, affording them but a temporary protection of boards. Your best plan would be to ask some gardener to raise a few plants for you, or perhaps a neighbouring gardener would give you two. You may plant them in the bed; the boards nailed round the bed, and the oiled paper frames for covering the latter, would be useful. Plant about the middle of May. Two plants will be ample for the space you name. If you cannot procure plants you may sow the seed early in May, and cover with the oiled paper frames. You should afford them from 9 inches to a foot of good, rich, rather light soil. You could raise Cauliflower plants on the bed before it was wanted for the Vegetable Marrows.

Melon for Exhibition (*Clericus*).—Oulton Park Hybrid is one of the finest of the Scarlet-fleshed kinds, and Green Pine-Apple Gem of the Green-fleshed kinds.

Mulberry Unfruitful (*Idem*).—The cutting back or down of the tree would cause the production of strong unfruitful growth. We apprehend its vigour will now be spent; the shoots must be kept moderately thin, and the foreright and side shoots closely pinched at the third leaf. It will fruit in a year; if not, root-prune it.

Climbing Plants for Greenhouse with Vines (*Inquirer*).—The following will do well trained to fan, conical, or balloon-shaped trellises, which should be made of wire, and painted green. Lapageria rosea, Hibbertia dentata, Kennedya hoophylla floribunda, K. Marryattæ, and K. bimaculata variegata, Jasminum gracile variegatum, Rhynchospermum jasminoides, Pergularia odoratissima, Tropæolum azureum, brachyceras, and tricolorum, and Sollya linearis. They cannot have too light and airy a situation.

Indian Corn (*Idem*).—The best plan is to sow the seed in pots placed in the greenhouse, or, better, in a hotbed, from which, when the plants are a few inches high, they should be removed to the greenhouse. Afterwards harden off, and plant out in the open ground in good soil and in a warm situation early in June. You may grow it in the greenhouse, using nine-inch pots; but, unless well syringed, you will have a plague of red spider, and under no circumstances is it worth the trouble. Do not be misled by Mr. Hullett.

Gentiana acaulis and Alpine Rose Seed Sowing (*Novice*).—The seed of both the Gentiana and Rock Rose, or Cistus, may be sown now in pans three parts filled with crocks, and then to the rim with a compost of turfy loam and sandy peat in equal parts, adding a third of silver sand. The compost should be chopped fine and sifted, the roughest parts being placed over the crocks or drainage, and the finely-sifted soil on the top. Make the surface smooth, scatter the seeds over it, and cover very lightly with fine soil. Give a gentle watering through a fine rose, and place the pans in a cold frame, which should be kept close until the plants appear, when air may be freely admitted; expose fully in a few days. The soil should be kept moist, but not saturated with water.

Name of Fruit (*C. B., Bawtry*).—*Pear*, Bergamotte Esperen.

Names of Plants (*A. N.*).—We cannot name plants from the mere tips of shoots beaten flat by the post-office punches. (*F. G.*).—The two leaves are of the Loquat (Eriobotrya japonica). Trained against a south wall it will endure our winters. See our last volume, page 226, for directions as to culture, &c. (*W. F. R.*).—Arabis verna, or Spring Wall Cress.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending March 12th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 6	29.810	29.657	42	27	42	42	N.E.	.00	Overcast, with clouds of a dark, dusky hue; cloudy; densely over-
Thurs. 7	29.593	29.583	37	28	42	42	N.E.	.00	Hazy, with snow flakes; snow showers; snowing. [cast.
Fri. .. 8	29.570	29.486	40	26	42	41	N.E.	.08	Snow flakes; cloudy and cold; overcast.
Sat. .. 9	29.518	29.202	44	35	45	41	N.E.	.46	Slight haze; very boisterous, with rain at night.
Sun... 10	29.456	29.121	45	33	42	42	N.E.	.03	Hazy and damp; drizzling rain; densely overcast at night.
Mon... 11	29.682	29.561	41	32	42	42	N.E.	.04	Hazy; hazy; drizzling rain at night.
Tues. . 12	29.741	29.646	39	27	42	42	N.E.	.06	Sleet; boisterous; overcast at night.
Mean	29.624	29.465	41.14	29.71	42.43	41.71	..	0.67	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BRAHMA'S USURPATION OF THE DORKING'S THRONE.

Sir,—I am a Dorking cock of the purest blood and proudest lineage. My ancestors have been settled in Surrey since, we believe, shortly after the Deluge; we never have quite forgiven that upstart, William the Norman, for first intruding himself, and then intruding French eggs into England. Nature endowed us with an extra claw to each foot, to mark that we were superior to every other fowl. When Mrs. Game calls upon my wife, she does, indeed, treat her as an equal, and is mighty civil to her; but then Mrs. Game saw good society until the last few years, when her husband, being deserted by noble lords, took to low public-houses. Still, though we are sorry, we always say, "Game is a gentleman by birth," though even he has never been admitted, as we always have been, to the tables of the great, where every one expects to meet us, and is sorely disappointed if any other fowl is present in our stead.

Well, sir, knowing my place, as I am thankful to say I do, judge my indignation when I learnt that Brahmas are to have a prize of £6 at the Bury St. Edmund's Show, and Dorkings, and all other varieties only £5. I have crowed myself hoarse, sir, about it. I have been so angry, and become so red in the gills, that my wife, fearing apoplexy, said to me, "My dear Dorking, go to Mrs. Goose, and beg her to give you one of her quills, she is very good-natured, and write off to 'our Journal' about it, that will ease your mind." So, sir, here I am, pen in foot, and my indignation is so great that I fear my scratches will sorely puzzle your printer's devil.

What can that Committee mean by putting these Brahmas

above us? And now I must let you into a little family history of which we have all along been rather ashamed, and so have kept it close. The truth is, these Brahmas are related to us, but not in a respectable way. A sister of my great-great-great-grandmother, a giddy young thing of strange tastes, fell in love with a young Cochin cockerel. Whatever she could see in his coarse yellow legs we could not understand. The fellow had not even a tail, our pride and glory, and besides he had never learnt to crow properly; we thought he was asthmatic from sleeping in a damp roost. Well, to hush up the affair, it was so disgraceful, we sent off the couple to America, when judge our surprise, the impudent hussy sent her brats to England, and pretended they were a new and distinct race of fowls, and she actually took in a number of good-natured, or rather, weak people, and we laughed at the boasted discernment of man.

Now, to think of these illegitimate children setting themselves, aye being set up, above us, is too bad. Even a great advocate of Brahmas in your last week's issue (February 28th)—we always read the Journal—said, "As table fowls they are not equal to Dorkings." As to their eggs—well, if you dip a silver spoon in a Brahma's egg, and another in an egg of one of my dear daughters, you will find next morning the spoon placed in the egg of the former is far more discoloured than the one placed in the egg of the latter, the reason being that the coarseness derived from the Cochin is inherited to a degree by the Brahma, and there being much more sulphur in the egg the spoon is more discoloured. This I was told by a scientific gentleman.

But, sir, we fowls do not come into the world merely to lay eggs, we supply food to man. Look at our beautiful broad, deep breasts as they lie bare and white on dinner-tables, and look at our short legs.

But, Sir, this setting up Brahmas above Dorkings won't do. I can thrash Mr. B. alive, and beat him when dead, man being the judge. My wife will lay her eggs against Mrs. B.'s for quality, and show her bust and legs against her before any jury of housekeepers in England. Then, as to the much-vaunted laying of Miss B., there is a pretty little cousin of ours, of the good old English breed, who used to be called "Everlasting Layers," now absurdly called Hamburghs. Well, Miss Hamburgh, I know, lays more eggs even in winter than Miss Brahma, and a great deal better ones, too; and then, is not Miss Hamburgh a pretty dear? Yours, with all respect—OLD DORKING COCK, *Dorking Castle, Surrey.*

[Every one will sympathise with our old English bird, and *when* they read it all the tenants of the Surrey poultry-yards will flap their wings applausively of his letter.

We quite agree with Cowley, that

"'Tis greater to restore, than to usurp a crown."

So we will do our best to replace the diadem of poultrydom on old Dorking's head. With that intent we publish the following from the pen of a good authority:—

"Brahma Pootras are admittedly good winter-layers (if pullets of the previous year, as no old hens of any breed ever lay early), and that, of course, is when eggs are most valuable; nor does cold weather stop their laying, unless extraordinarily severe; that, too, is a very good feature. The eggs, also, are without a doubt, very excellent in quality, and from being hard and thick-shelled, they keep good longer by far than most eggs—such as Spanish, for instance.

"Against these merits it must be noted, Brahma Pootras are unquestionably 'very great eaters,' and the eggs, for the size of the fowls, are unusually small. The flesh of the very young Brahmas is good, but if kept to be above half grown, they are very coarse-fleshed, and Cochin-like, with yellow "hides" (for you can hardly call it skin), not suitable at all for boiling.

"Whatever may be stated to the contrary, Brahmas are 'leggy'—that is, the thighs are mostly coarse and large, a Dorking for the table being quite a different sort of dish. A cross between Game and Dorking (only a first cross), is one of the most hardy and best table fowls I know."]

INQUIRY.

I BEG to inform your inquirer that I have had dealings with Mr. Brooksbank, No. 4, Back Rolleston Street, Manchester, and believe him to be an honest, though probably a poor man. He has purchased Spanish fowls from me, and of the "crack strains" of Rake, Rodbard, and Teebay, and he has paid me honourably, sending the post-office order with the order for the birds. I feel in justice to Mr. Brooksbank bound to send this communication for insertion in your next issue, as such an inquiry is calculated to do a man, especially a poor man, much harm. I have frequently seen his name in the prize lists of THE COTTAGE GARDENER, which one would have naturally thought would have been sufficient to have kept such an inquiry from being made public. Further, I have seen upon referring to Mr. Brooksbank's advertisement, in the Journal of February 28th, that he gives the names of the shows where he has taken prizes and commendations, and think it would have been more prudent for your correspondent to have referred to those shows previous to maligning the character of such a one.—WILLIAM H. WHEELER, *The Cottage, Carlton, near Nottingham.*

BREEDING DARK BRAHMA POOTRAS.

(*Concluded from page* 186.)

I HAVE shown in two former papers that it is no easy matter to obtain these fowls of a high type, even as regards the more general points of form, size, and comb; but there yet remains the greatest difficulty of all, that of breeding them true to colour. That it is a difficulty many a beginner knows only too well; and, in fact, I know of no breed in which so much careful study is requisite to success.

The difficulty is, that whilst none of the poultry books recognise more than one colour in Dark Brahmas, described as "dull white, nearly covered with minute pencilling of a black or dark grey colour," there are many different strains as distinct in their prevailing tints as can possibly be, and some also varying in the character of the pencilling itself. This is no new fact to old breeders, but it has never been noticed in any work on poultry, and should be clearly explained for the help of beginners. Let any such examine at a large show a pen of Mr. Boyle's birds, and then compare with them any pair of hens shown by Mr. Lacy, and he will not fail to notice the distinction I am speaking of. The two pens will be types of two as distinct "schools" of colour as can well be imagined. I will not here go into minute differences in the form of the pencilling, but will only remark, that whilst the aim of Mr. Boyle is evidently to obtain as clear a ground colour as he possibly can, in which he has to a great extent succeeded, many of his birds being quite free from any shade of brown, Mr. Lacy, as is well known, considers brown the correct ground colour of a Brahma, and avowedly seeks to produce it, with the salmon-coloured breasts for which his pens are distinguished.

I have taken these two strains simply as being the two widest apart that I know of, and abstain most carefully from giving any judgment as to which is the correct standard. I have my own decided notions on this head, but such matters belong strictly to private opinion, and my object just now is only to point out the difference. Such differences and peculiarities in other well-known strains, equally characteristic, but, perhaps, less striking to a mere casual eye, will at once occur to the experienced reader: but I will only mark one, that whilst some strains are noted (Mr. Hinton's, for example), for the distinctness of the pencilling, every feather being marked with bars of black as sharply defined as in a Pencilled Hamburgh; in others the feather is so heavily covered with the black marking, that until closely observed the effect of the whole is like a uniform dark ground colour. These are not accidental differences; each character and colour of pencilling has its admirers, has been produced and perpetuated by careful breeding, and is in most cases a marked and known characteristic of the strain to which it belongs.

Now, the point I wish to call attention to is this, that whilst the hens thus vary, there is no apparent difference in the cocks, at least in most cases, and except to a very practised eye; and if in purchasing stock the beginner simply buys the best cock he can procure, and mates him with the hens which most strike his fancy, the chances are that the produce will greatly disappoint him. I do not mean to say that if both be really good birds there will not in the worst case be some good chickens; but I mean that there will be no certainty whatever what colour the chickens may be. For instance, to take the two strains just noted, I knew a case where a splendid cockerel of Mr. Boyle's was mated with two very good hens of Mr. Lacy's strain. The result was just what I should have expected, both colours were spoilt except in a very few cases, and the pullets were for the most part of the clear grey colour derived from one strain disfigured by brown patches imported from the other.

It will be understood again that I am making no invidious

comparisons. I admit to the fullest the right of every one to his own opinion, and desire simply to point out and lay stress upon the fact, that whatever be the colour preferred, it will be much injured if indiscriminately crossed with a strain from which it greatly varies.

In commencing the breeding of Brahmas, therefore, it is necessary first to determine the kind and colour of pencilling which shall be adopted, and then to see that all cocks purchased are of strains which come pretty near it. For instance, if a cock be seen and admired, the hens shown from the same yard should also be examined, and unless they also approach tolerably near to those already in the yard the male bird should be rejected. I am supposing all along that exhibition excellence, and, consequently, uniformity in marking, are desired. Those who keep fowls for only their flesh and eggs need no such directions; but that they will not be useless to exhibitors is proved by the numerous unsightly pens I see at every show, containing birds of all kinds of irregular and mottled colour, caused by this ignorant and indiscriminate crossing of different strains.

Whatever be the colour preferred, it is of very great importance that the breast be well and darkly covered with pencilling. No pullets not thus marked can be called really good. To obtain such the breeding cock should be chosen with breast, thighs, and under parts as nearly as possible jet black, taking especial care that the fluff about his thighs do not show much white. The latter is very apt to breed what I consider most unsightly pullets, with a white streak down the centre of each feather, as in the back of a Silver-Grey Dorking. A spangled-breasted cock is by no means bad for breeding, however, and for exhibition far preferable; but it is certainly essential to good pullets that the thighs and legs be as dark as possible.

With respect to the character of the pencilling, my own preference is for the well-defined Hamburgh-like marking, and to obtain it in perfection the cock must be selected with the greatest care. The signs of the needful quality in him are in the sharp edges of the black stripes on his hackle and saddle-feathers, especially the latter. In many birds the saddle-feathers nearest the tail are very "cloudy," and such will never breed well and sharply-pencilled pullets, for which it is highly necessary to select a cock in whose saddle-feathers right up to the tail the central black stripe is clear and dense with a well-defined edge. The neck-hackle should have plenty of black in it about the shoulders, or the pullets will be too light in the plumage. For the more minute and heavier pencilling less care in the selection of the cock will be necessary, provided, as before remarked, the yard which bred him correspond in character with the colour desired, and his general plumage, form, and size be satisfactory.

I should myself prefer mating a two or even three-year-old cock with three pullets. Many prefer a cockerel with two-year-old hens, and the chickens are certainly larger at first; but I believe that those hatched from pullets have usually most constitution, and eventually make the largest birds. This point, however, is comparatively immaterial, but the number of hens or pullets to one cock should never exceed three in any of the very large breeds.

In these remarks I have endeavoured to serve all and offend none, leaving to each the free choice of that "school" of colour to which his fancy inclines. On a future occasion I will briefly mention the crosses usually found in Brahma fowls, and the means of their detection.—Nemo.

BREEDING GAME FOWLS.

(*Continued from page* 186.)

In crossing colours when the hens are of a stronger and harder colour than the cock, most of the cock chickens will be of the hen's colour, and most of the pullets of the cock's colour; for instance, in crossing Brown Red hens with a willow-legged Black-breasted Red cock, most of the cocks will be Brown Reds, and most of the pullets of the Partridge colour. This, however, is not a good cross.

The different colours of eyes should never be crossed or bred together, as this produces mongrel or mixed colours as soon as anything, even if the fowls are of the same colour in plumage, but with different-coloured eyes. Red eyes should be bred with red eyes, black eyes with black eyes, and yellow eyes with yellow eyes. Bay eyes and light brown eyes are the mixtures, and sometimes by bad crossing some birds have one eye red and the other eye yellow.

Game fowls are in their prime at two years old, cocks as a rule declining after four years old, and hens declining after five years. The cocks wear out faster than the hens, the fecundity of the latter notwithstanding. Many birds are, however, quite healthy and vigorous at much greater ages. I have known a Game hen breed good chickens at ten years old, and many valuable brood cocks have been bred from at eight and nine years old. Such old hens only lay about one clutch of eggs in May or June, and after laying about a dozen eggs cease laying altogether for the year, bringing up their own chickens well if put on their own eggs.

In choosing eggs for sitting, they should be examined or looked through by means of a bright candlelight, and such as are clear to look through, with the air-bladder plainly distinguishable at the large end of the egg, are fresh and good, while such as appear spotted and clouded are too stale.

Good stags and pullets will, of course, produce better chickens than any bad full-grown birds, but as a rule full-grown birds breed the best. In crossing and mixing colours in breeding, all the colours incline to breed back to the darker original colours (the Black-breasted Reds and Brown Reds), Duckwings always breeding back to the Black-breasted Reds, Dark Greys and Dark Birchens to the Brown Reds, and the lighter colours, such as Piles, to the Ginger Reds. The Brown Red colour prevails the most in crossing, and the Black-breasted Red is the next in general.

Eggs laid in March will, as a rule, produce the most cock chickens, especially if first strings or clutches of eggs after moulting. Eggs laid in the warmer and softer months produce most pullets. Dark Greys and Brown Reds will throw most cock chickens and the fewest pullets, and the willow-legged Black-breasted Reds, and the yellow or daw-eyed sorts throw most pullets and fewest cocks in proportion. The other sorts are intermediate between these in this respect. Black-eyed and red-eyed breeds produce most cock chickens. I have now been sufficiently prolix, I believe, on the subject of breeding.—Newmarket.

SUMMER POULTRY SHOWS.

Would it not be well if committees would take into consideration the extreme heat of the weather in the months of June, July, and August, and reduce the pens of large birds—such as Dorkings, Cochins, and Brahmas—to a cock and one hen instead of two hens? I think this would contribute greatly to the health and comfort of the birds, as I have seen them much distressed at that season of the year.—An Exhibitor.

POULTRY PRODUCE.

I again submit my poultry account of the past year for your inspection. My poultry yard for the first six months was made up of four Dorking and two Brahma hens, and during the remainder of the year of four Dorkings only; the produce has been as follows:—

January	65
February	68
March	77
April	62
May	73
June	58
July	64
August	63
September	23
October	2
November	18
December	41
Total	619

	£	s.	d.
Receipts	5	13	8
Expenses	4	5	1
Profit	1	8	7

Twenty five chickens were hatched, and twenty-one reared.

In this account I have only charged 1*d.* on each egg consumed by ourselves, that being I think about its real value.

I find feeding fowls when at roost during the cold winter months conducive to early egg-production. During December and January fowls, of course, go to roost very early, and however well fed during the day, by 8 or 9 o'clock in the evening their crops will be found quite empty. While the past severe weather lasted I adopted the following plan:—About 9 o'clock I mixed up about as much barleymeal as six hens and a cock would be likely to consume, together with a small quantity of

fat, when obtainable, and also leaves of winter greens thawed and chopped fine. This treatment put my birds in fine condition, causing them to commence laying as early as the 26th of January, and up to yestesday, the 24th of the present month (February), they have shown their gratitude by laying the very respectable number of eighty-nine eggs, or an average of three per day.

If a good egg supply is desired empty crops should not be tolerated, at the same time over-feeding must be avoided.

My fowls have only a 12-feet-square run, but are let into the garden during the morning for a short time at present; this privilege, however, must soon be stopped.—J. M. S.

THE THORNE ORNITHOLOGICAL SHOW.

This Society held their second annual Exhibition of Pigeons, Rabbits. Canaries, &c., in the Temperance Hall, Thorne, on the 5th inst. The specimens numbered from 160 to 200, and were of first-class character, attracting much attention. The *Rabbits* were particularly choice and of extraordinary dimensions; they would not have disgraced some of the first shows in the country. One Rabbit was sold for £5 15s. The largest and most successful exhibitor of *Pigeons* was Mr. H. Yardley; of Rabbits, Messrs. Hanson & Wagstaff, of Thorne; and of birds, the Rev. H. C. Russell, of Doncaster, who purposes giving a prize for Lizard Canaries at the next Exhibition. The Hall was tastefully decorated with evergreens, &c., by Mr. Charles Haycroft, one of the Honorary Secretaries, who with his coadjutor, Mr. H. Cawood, and the Committee, were most successful in the whole arrangements.

Mr. T. Addey, sen., of Epworth, exhibited a novel and very interesting observatory bee-hive, which, being composed chiefly of glass, displayed the comb, the honey, and the bees at work. The attendance was large, and the Exhibition must have been a success.

Carriers.—First, H. Yardley, Birmingham. Second, W. White, Snaith. Third, H. Grant, Thorne.

Croppers.—First, F. Key, Beverley. Second, H. Yardley. Third, T. C. & E. Newbitt, Epworth.

Tumblers.—First, C. Gravil, jun., Thorne. Second, H. Yardley. Third, F. Key. Commended, J. Wrigley, jun., Thorne.

Fantails.—First, A. Parry, Rochdale. Second, H. Yardley. Third, T. C. & E. Newbitt. Commended, C. Cussons, Hull.

Jacobins.—First, A. Middleton, Newport. Second, H. Yardley. Third, C. Gravil, jun.

Barbs.—First, Rev. W. J. Mellor, Colwick Rectory. Second, H. Yardley. Third, A. Dove, York. Highly Commended, F. Broemel, Ladywell, Kent.

Nuns.—First, J. Marshall, Driffield. Second, H. Yardley. Third, T. C. & E. Newbitt.

Turbits.—First, J. Marshall. Second, T. C. & E. Newbitt. Third, H. Yardley. Highly Commended, H. Grant.

Selling Class.—First, F. Broemel (Russian Porcelain). Second, F. Waitt, Sparkbrook (Hyacinths). Third, H. Yardley. Highly Commended, F. Key (Jacobins). Commended, J. Marshall (Nuns).

Any Variety.—First, H. Yardley. Second and Third, F. Waitt, Sparkbrook (Masqueraders and Ural Ice). Highly Commended, J. Mason, Boroughbridge (Frillbacks).

Rabbits (Any colour.—First and Third, Messrs. Hanson & Wagstaff, Thorne. Second, C. Gravil, jun. Highly Commended, F. Horsfall, M.D., Pontefract; W. J. Constable, Thorne. *Buck.*—First, Messrs. Hanson and Wagstaff. Second, W. Allison, Sheffield. Third, F. Roberts, Thorne Highly Commended, T. Faulkner Sheffield. Commended, Messrs. Hanson & Wagstaff. *Doe.*—First, J. Taylor, Sheffield. Second, R. Stephenson, Beverley. Third, Messrs. Hanson & Wagstaff. Highly Commended, P. Warren, Southampton. Commended, A. Cawood, Thorne; C. Gravil, jun. *Heaviest.*—First, W. Gant, Doncaster. Second, W. Allison. Third, G. Chester, Thorne. *Extra Stock.*—Highly Commended, A. Cawood.

Canaries (Yellow).—*Cock.*—First, W. Trimingham, Fishlake. Second, M. Halifax, Thorne. Third, E. Meggitt, Thorne. Highly Commended, Rev. H. C. Russell, Doncaster; E. Roberts, Thorne. Commended, Rev. H. C. Russell. *Buff Cock.*—First, W. Trimingham. Second, H. Grant, Thorne. Third, Rev. H. C. Russell.

Goldfinch.—First and Second, Rev. H. C. Russell. Third, C. Chappel, Thorne. Highly Commended, C. Purdy, Thorne; G. Richardson, Stainforth. Commended, H. Grant.

Linnet.—First, Rev. H. C Russell. Second, C. Outlaw, Thorne. Third, J. Wrigley, jun. Highly Commended, C. Temperton, Thorne; R. Gravil; H. Grant, Thorne.

Mule.—First, J. Haycroft, Thorne, Second, Miss Raywood, Thorne Third, C. Tomlinson, Thorne.

J. Richardson, Esq., officiated as Judge.

FUMIGATING BEES.

My difficulty is that in a well-populated hive a moderate amount of smoke does not reach or affect a very large proportion of the bees, by reason of their being clustered close together between the combs or partly within the cells. If more smoke be applied the bees nearest the entrance are killed by the overdose, and even then do not fall down so as to be cleared away, but hang to one another, requiring the application of a feather, which, after all, does not perfect the operation, many bees remaining among the combs and regaining consciousness, not in the best of tempers, during the process of cutting out combs, &c. After fumigating or sprinkling with peppermint water both lots of bees, I have never as yet found any difficulty in uniting.—C. C. Ellison.

[When, during our novitiate in bee-keeping, we resorted to fumigation we always used sufficient smoke to quiet all the bees, and in this way escaped the difficulty you speak of. Driving is, however, so easy, and fumigation at all times so unsatisfactory, that we would earnestly advise you to endeavour to master the former, and entirely discard the latter.]

BEE-KEEPING IN DEVON.—No. XXVII.

NON-RESISTANCE, OR "PEACE AT ANY PRICE!"

A valued apiarian correspondent writes me as follows:—"I have an instance of marauding bees plundering, without any opposition offered, the contents of a hive which I concluded was queenless; but on elevating the frames I found queen and bees in excellent order, and very much disposed to resent my interference. Can this be an instance of marauding bees having a signal similar to that of their unfortunate victims?" It is not a little singular that this letter came to hand the very day on which I had discovered a case of the same kind in my own apiary.

When the protracted frost broke up in January I lost no time in ascertaining how the stores of food held out in my various stocks, taking care in every doubtful case to make such additions as might insure my little *protégées* from present starvation. Among the stocks thus treated was one in which the bees appeared numerous, and which received a donation of a sealed honeycomb, in addition to a certain amount of liquid food. A more careful examination on the 12th of February revealing the unexpected fact that not only were the original and supplementary stores completely exhausted, but that the unfortunate colony was actually famishing, I at once surmised that it had been robbed, and concluded that most probably it was also queenless. A protracted series of examinations followed, during which every comb was more than once completely and most rigidly scrutinised, until it became pretty clear that no queen existed. The difficulty of "proving a negative" is, however, so well known, that I contented myself for the present with administering a moderate supply of food, and suspended proceedings until the next day.

The following morning discovered this queenless stock apparently in a state of the greatest activity, although no pollen was carried in. Evidently intelligence had reached the marauders that their former victims were once more "in funds," and the most active measures were again in progress for reducing them to their whilom state of utter destitution. A further strict examination proving that their recently acquired stores were rapidly disappearing without the slightest attempt being made to defend them, whilst no queen could be discovered, I at once reduced the number of their combs to four, and closed the hive. My next move was to examine the nearest stock which I found in a flourishing condition and possessing two combs of sealed brood. Having captured the queen of this colony, and placed her in a queen-cage with the view of protecting her from all risk, I removed two combs on each side, thus making room for the four remaining in the plundered hive, which I speedily lifted out, bees and all, and inserted in the vacancies thus caused. The few remaining bees having been rapidly brushed out on the top of the exposed frames, the whole received a sprinkling of syrup, the crown-board was replaced, and, the doubled hive having been shifted to a position midway between the two, the union was complete. During the remainder of the day the bees appeared very active and in a state of some little excitement, but not the slightest quarrel took place. The following morning I released the queen, saw that she was well received, and congratulated myself on the success of my manipulations.

As the day wore on, however, my suspicions became aroused. The doubled stock was far *too* active, but not a load of pollen was being carried in. An afternoon examination revealed the mystery—the bulk of the stores had already disappeared, whilst the remainder of the provisions was being rapidly carried off by a band of buccaneers; and all this without the slightest endeavour at defence on the part of the garrison, or any attempt being made to molest the queen, which traversed the brood-combs in peace and apparent security. Closing the hive once more, I set myself to watch the proceedings of the free-booters, whilst I deliberated what course would be the best to

pursue. The temperature was too low for fair work; but the suspicious activity of the plundered stock was emulated by one other in particular, which stood about a dozen yards off. Planting myself midway between these two, I soon made out a stream of bees rapidly passing and repassing between one and the other, so that no doubt could remain as to the identity of the actual culprits. Had any doubt been possible, it would, however, have been dispelled by an examination of the interior of the suspected hive, which, for an especial purpose, I deferred until evening approached, and which revealed the combs loaded almost to overflowing with the ill-gotten booty. Selecting one of the heaviest of these I brushed off all the bees, chuckling slightly to myself as I substituted this ponderous comb for one of the empty ones in the plundered hive; nor could I, even in the midst of my discomfiture, help feeling some little satisfaction at the idea of the retributive although tardy justice which I was executing in politely handing over to the marauders a perfectly empty comb, which they had themselves only recently been so assiduous in clearing out. My object in doing this so late in the day was to furnish the now nearly-destitute stock with a supply of food, which the buccaneers should not have time to remove before the approach of night compelled a cessation of their nefarious labours. As soon as darkness had fairly set in I shut up the victimised stock, and conveyed it to a dark cellar, there to remain until I could make arrangements for transporting it to such a distance as might place it entirely out of the reach of the buccaneers. Fearing lest these latter might transfer their unwelcome attentions to some of the neighbouring stocks, I left the outside case and roof in their place; and was not a little amused during the next and succeeding days to see a multitude of would-be plunderers investigating the empty case, in puzzled bewilderment as to what had become of its former easy-going inhabitants and their ill-defended stores.

The non-resisting hive having been transported about half a mile off, a distance which I have found sufficient so early in the season, quietude was restored in the apiary, and remained undisturbed until the 21st of February, when I ventured to administer a bottle of feed to the stock which stood nearest to the spot previously occupied by the removed colony. The usual degree of excitement supervened without creating any suspicion until the afternoon, when I was somewhat alarmed by observing the former freebooters and the inhabitants of the hive which stood next to them, and which I had more than suspected of taking a secondary part in their former nefarious proceedings, again manifesting a very equivocal degree of activity. Similar investigations to those above related, pointing irresistibly to the same conclusion—viz., that this third stock with a fertile queen and an abundant population was surrendering its stores without the slightest attempt at defence, it was in its turn shut up in the evening, and took its place the next day beside the other votaries of "peace at any price," where both stocks have since remained unmolested, and where they are both doing well.

With regard to the query propounded by my esteemed correspondent, I confess myself unable to come to any satisfactory conclusion, but must leave it to others to form their own opinions. Are these apian freebooters likewise freemasons? and are they in the possession of some mysterious password or signal which has served as an "open sesame" to the store-combs of three successive hives? Or may not the rightful guardians of these latter have joined the "Peace Society," and with all the fervid and undiscriminating zeal of new-made converts, carried their exemplification of the doctrine of non-resistance far beyond the practice even of that great advocate of peace, John Bright himself? However this may be, the probable result of a national adhesion to this doctrine may, I think, be reasonably inferred from the sad fate which must have inevitably befallen these apian votaries of "Peace at any price," had it not been averted by the timely intervention of—
A Devonshire Bee-keeper.

BLACK DRIVEN BEES.

These are so far all right, and were seen to take in pollen on February 17th, 20th, 24th, and 28th freely. They were driven on the 13th of September, 1866, and their previous history is stated in Vol. XI., page 399.

The lowest reading of the thermometer noted by me during the first week of January this year occurred on the 4th—namely, 7°; on the 14th of the same month the lowest temperature was reached, being 6°. My thermometer is fully exposed, with a north aspect, and is 4 feet from the ground in a walled garden, the elevation being about 340 feet above the sea.—J. G. C., *South Northamptonshire.*

FOUL BROOD—ASPECT OF APIARY.

The honey season is gradually approaching, and I have been taking a survey of my hives to see how they have stood the winter. A Stewarton hive attracted my attention by the appearance of robber bees, and on examining it I found the lower box full of empty comb, and some of it white with mould. The upper box is full of comb, partly filled with honey, and what I suppose is foul breed. I have excised this, cleansed the floor-board, and placed the box with the bees on it. It is quite possible I have not cut out all the foul brood. Will the taint remain in the hive in consequence? and have I done right in leaving the bees but the one box? I took from this hive a top box of pure honey last autumn, weight 13 lbs. I considered I had a flourishing colony. The bees which are left appear feeble.

The next colony, a Stewarton, also in the same bee-stand, is the most flourishing colony I have, excepting a Woodbury hive standing in a window at the top of the house on the north side. This was a May swarm of last year. It filled the hive and yielded me 5 lbs. of honey in a straw cap placed over the hole in the crown-board.

I shall be glad to know what you advise me to do as the spring advances. Shall I put on a large super, or distribute the bar-frames among other hives? I own that swarms come quite fast enough, and I rather aim at obtaining honey without multiplying swarms.

I consider a north aspect a far better one all the year round than a south or south-east one. Is this the opinion of your readers?—B. B.

[If you are right in believing that the combs contained foul brood the stocks should be at once destroyed, and the hive purified by scraping and a thorough washing with a saturated solution of chloride of lime, the remaining honey being applied to any purpose except feeding bees. We give this advice, believing that with foul brood, as with the cattle plague, the plan of "stamping out" on its first appearance is by far the best. As you aim at a good honey harvest rather than the multiplication of swarms, we should advise putting a large super on the Woodbury hive, substituting, however, an adapter for the crown-board. Experience has satisfied us that aspect is a point of very secondary importance in bee-keeping.]

FOUL BROOD (?).

I am desirous of communicating some particulars of my experience of foul brood. A few years since I had an apiary at Epworth, where I now reside, which consisted of fifty stocks all in one row, when this disease came amongst them. The first attacked was the tenth hive from the west end of the row, and fifteen stocks in succession were totally destroyed. More would doubtless have been infected had I not given them the strictest attention and used every exertion to stem the disease. I noticed from the first bees coming out of the hive and crawling on the ground to rise no more, appearing as though they had just made their escape from a treacle-pot, whilst others were going into the nearest hive, which led me to conclude that the disease was infectious. I therefore lost no time in removing all these stocks which showed symptoms of the disease, after which the rest went on well; so I lost sight of the pest for that season, which was a happy release. Although I have had to contend with it many different times since, I have never again experienced so fatal an attack. I had several stones of honey from the infected stocks, which I used after heating it, whilst I well washed all the utensils in hot water, and dried and aired them well before I used them again.

I attributed the origin of this fatal disease to having sent so many late swarms and condemned stocks of bees to the heather, where for the first few fine days the bees were able to collect honey; but after this there were two or three weeks of gloomy wet weather, so that the bees could not go abroad, which caused the hives to be full of brood, and before this was matured cold chilly weather set in, which compelled the bees to close up betwixt the combs, leaving numbers of the larvæ to perish in the combs. For these and other reasons I am persuaded that nineteen out of twenty such disasters are brought

on by the careless managers, who ought to see that all the stocks are brought up to the mark in September; and if feeding be required it should be done copiously at night, whilst in spring bees ought to be fed very sparingly. I may state from experience that feeding copiously in spring often causes the ruin of many good stocks, as it creates great excitement and confusion both inside and outside the hives, and, by developing so much more heat, induces the queen to fill the combs with brood, which, owing to sudden changes of weather, is often left uncovered, when vast numbers perish in the combs. I am convinced that dead brood will become noxious, and infectious too, if not removed in due time; and again, by feeding freely in the spring excitement and robbery often take place.—Thos. Addey, sen.

[The disease you describe is certainly not foul brood, which, as Dzierzon says, "does not affect adult bees, but only the brood;" but it appears to be nearly identical with what Mr. Woodbury has hypothetically denominated "dropsy." Its symptoms and the mode in which he successfully treated it were fully described in an article from his pen which appeared in page 534 of our ninth volume.]

DESERTION OF HIVES DURING SUMMER.

After considering the circumstances related by your correspondent "Nil Desperandum," No. 307, page 139, I am strongly of opinion that the desertion of his hives arose from their occupants being queenless. He probably subdivided them too much, and too often, which is never wise; but last season was particularly unpropitious for doing so. The continued wet weather caused many young queens to be lost during their flights, besides making bees generally very prone to rob each other's hives; and queenless lots do not, as a rule, defend their stores very long, but generally end by deserting to the enemy.—J. P. E.

Importation of Eggs.—The importation of eggs continues to increase annually. In 1864 they arrived to the number of 335,298,240; in 1865 to 364,013,040; and in 1866 to 438,878,880, which is approaching to one million and a quarter daily.

OUR LETTER BOX.

Fowls with Discharge from Nostrils and Eyes (*Lex*).—Your fowls are probably suffering from cold. If such be the case, stimulating food such as stale bread soaked in strong ale, is the best remedy. As they do not get worse, they are sure to get better, but will not entirely recover while we have the present cold winds. The ale you have given has probably kept them from becoming worse. If you have not used them, try Baily's pills for the roup. Calomel, soap, and pepper, and the feather, are all useless in this case. The last remedy is used only for gapes. The only external treatment for the fowls that weep from the eyes and nostrils is to wash the faces with cold water and vinegar.

Food for Turkeys (*Constant Subscriber*).—Your Turkeys, like many human beings, are suffering from damp weather and cold winds. Give them some bread and ale twice every day. The bread should be stale, and the ale strong. Your food should be barley, sometimes a few oats, and if it be varied by giving soft food every other day, the birds will do all the better. A capital meal for Turkeys is made of equal parts of oats and barley with a few beans, all ground and mixed together. This may be slaked with water or milk, and when suffering as your birds are, the addition of some onions chopped fine and mixed with it is often beneficial.

Houdans (*F. A. M.*).—In some of our back Numbers you will find pages devoted to the Houdans. The combs of the cock and hen are in front of the top-knot, rising in points at each end, with smaller points in the cock coming down to the nostrils. They are across the skull and not along it, as in many other breeds. The comb of the hen is much smaller than that of the cock, and the smaller points do not come down in front. They should all have five claws. They are heavier than they appear to be. The cock should, if a fine specimen, weigh between 7 lbs. and 8 lbs., and the hen 6 lbs.

Cochin-China Hen Staggering—Food for Poultry (*Buff*).—Are you sure your hen does not suffer from being egg-bound, or, at least, from laying her eggs with great difficulty? We ask the question because walking with her tail down is a great symptom of it. If that is the cause, the introduction of a wing-feather steeped in oil into the egg-passage will relieve her. We consider the ground oats we mentioned last week as the very best poultry food. A change is, however, sometimes necessary, and then whole barley is good feeding. We are not friendly to Indian corn as constant food, on account of its fattening properties, but once a-week it makes a good variety in the bill of fare. Continue the castor oil with the sick bird, and feed on bread, instead of meal, steeped in strong ale. Give a pill of camphor every evening. It should be the size of a pea. We are unable to state how much your birds should eat, as we do not know whether they can obtain anything beyond that which is given by hand.

Yard-floor for White Cochin-Chinas (*Wilmslow*).—We keep ours in a pen of about the same size as yours. The bottom of it is of gravel, covered some inches thick with road grit. This latter keeps dry, and soon dries up after rain; but we have given a fall to the pen which prevents any settlement of water on the surface. We find it helps to keep the plumage bright to turn them out on the grass at times, but whether we do or not their feathers are always bright.

Dorking Hens Pecking off the Cock's Feathers (*J. C. P.*).—As a rule, when fowls eat each other's feathers it is from a morbid appetite arising from a disordered state of body, or from the lack of something necessary to their health. It is strange that the victim of these attentions seems to like them, and will stand still not only while other birds eat his feathers but his flesh. Green food is generally a cure, and the best is to cut large heavy sods of growing grass with plenty of earth to them, and throw them into the pens. The bare spots should be freely rubbed with compound sulphur ointment; and it will be well to remove the cock for two or three days. This can be done even for a longer period without loss or detriment of any kind. We presume your birds are in confinement, as it is a habit seldom acquired when fowls are at liberty. They will eat the whole of the turf, grass and earth.

Aylesbury Drake (*A Constant Reader*).—We know of none to be sold near the Isle of Wight. Mrs. Seamons's direction is Hartwell, Aylesbury.

Exchanging Fowls (*T. M.*).—We do not know of any one requiring such an exchange, and the only mode of ascertaining is to advertise.

Fleas in Poultry-house.—The Feverfews, especially Pyrethrum roseum and carneum, produce flowers which dried, reduced to powder, and sprinkled about a place infested by fleas, are said to drive them away. There is no "Poultry Diary" now published One was published at Colchester, but has long since been abandoned. An interleaved almanac is quite sufficient for the purpose.

Eggs (*T. M.*).—The eggs were excellent and undistinguishable from others laid only a few days. If, therefore, they had been laid long since, as you intimate, we shall be much obliged by your stating the plan adopted for preserving them.

Game Fowls' Eggs (*A Cottage Gardener Reader*).—The hen hatching the eggs will not have the remotest influence over the courage of the chickens.

Sebright Bantams—Fowls for Egg-laying (*T. S.*).—Though the hens are darker golden than the cocks, you will breed good Bantams if the colours are clear and the lacing quite distinct. They must have double combs, and the tails should be clear, tipped at the end with black. The cock should have neither hackle, saddle, nor sickle feathers. The difference in colour between the cock and pullets is probably caused by the former having some Silver blood in him. This is immaterial, as many breeders run the two colours together. We think the Houdans will be the fowls to suit best, as bearing confinement perfectly, being good layers and non-sitters.

Pigeon with Diseased Wing (*G. R.*).—It is not at all likely that the disease is infectious, nor is it likely that it will interfere with the bird's breeding. To merely say a wing is "diseased" is very indefinite.

Turbit Pigeons—Shell-crowned and Shields, &c. (*A. L. B.*).—Some Turbits are shell-crowned, but usually the head is smooth-crowned. It is generally believed that the smooth-crowned is the original variety, and is therefore to be preferred. Shell-crowns usually are from Germany. By Shield Turbits you doubtless mean the Shield Pigeon, a German Toy thought to be produced from a Turbit and some other Pigeon. The "Pigeon-Book," to be had at our office post free for twenty stamps, will give you full information concerning this Pigeon. The head of a Turbit should be very broad, the beak the shorter the better, and the eyes large and of a black or dark hazel colour.

Pigeons (*A Young Beginner*).—"The Pigeon Book," by Mr. Brent. You can have it free by post from our office if you enclose twenty postage stamps with your address.

Peerage (*H. M. S.*).—As you require a Baronetage, Knightage, and Parliamentary Guide as well, at a moderate price, you cannot do better than purchase Debrett's. It is in two portable volumes, and well illustrated.

Sprouted Wheat (*J. H.*).—It is perfectly good for fowls, either chickens or adults.

Ailanthus Silkworm Eggs (*H. J. O.*).—Write to Lady Dorothy Nevill, Dangstein, Petersfield, or to Mr. W. B. Jefferies, Ipswich.

Bees Condemned and Saved—Hives (*W. H. Steer*).—We are glad to learn that you have succeeded so well in saving condemned bees. They need not be fed so long as they possess a tolerable store of sealed food. If you mean to go in for scientific bee-keeping, you cannot do better than adopt the Woodbury frame hive. Your measurements are correct, but the frames should not fit tightly, and in practice we do not make the notches in which they rest quite three-eighths of an inch deep, whilst they slope a little, so that being shallower at bottom than at top the frames lift out more easily.

Artificial Swarms (*Idem*).—In making artificial swarms from common hives, we prefer using two stocks. No transfer into frame hives should take place until the stocks to be operated on become well populated. We should say towards the end of April or in the month of May, according to the strength of the colony.

POULTRY MARKET.—March 13th.

We have little change to note. Our supply is still small, and the trade but middling.

	s. d.	s. d.		s. d.	s. d.
Large Fowls	0 0	to 4 0	Pheasants	0 0	to 0 0
Smaller do.	0 0	3 6	Partridges	0 0	0 0
Chickens	0 0	2 6	Grouse	0 0	0 9
Goslings	6 0	7 0	Guinea Fowls	2 6	3 0
Ducklings	3 6	4 0	Rabbits	1 4	1 5
Pigeons	0 10	1 0	Wild do.	0 8	0 0

WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 21—27, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
21	TH	Meeting of Linnean Society, 8 P.M.	50.9	32.6	41.7	17	4 af 6	12 af 6	43 af 7	33 af 6	15	7 25	80
22	F	[Royal Hort. Society, Promenade, 3 P.M.	50.5	34.3	42.4	18	1 6	13 6	50 8	59 6	16	7 6	81
23	S	Royal Bot. Society, First Spring Show.	50.6	33.0	41.8	16	59 5	15 6	54 9	26 7	17	6 48	82
24	SUN	3 SUNDAY IN LENT.	48.5	31.5	40.0	14	57 5	17 6	56 10	56 7	18	6 30	83
25	M	LADY DAY. Meeting of Royal Geographi-	51.0	32.6	41.8	15	54 5	18 6	55 11	30 8	19	6 11	84
26	TU	[cal Society, 8.30 P.M.	51.6	32.0	41.8	15	52 5	20 6	Morn.	5 9	20	5 53	85
27	W	Meeting of Society of Arts, 8 P.M.	53.7	34.2	43.9	13	50 5	22 6	49 0	46 9	21	5 34	86

From observations taken near London during the last forty years, the average day temperature of the week is 50.9°; and its night temperature 32.9°. The greatest heat was 75°, on the 27th, 1830; and the lowest cold 14°, on the 25th, 1850. The greatest fall of rain was 0.60 inch.

HOTBED FOR CUTTINGS AND SEEDS.

IN fulfilment of a former promise, I now offer a few hints on the raising of plants from cuttings and seeds at this season, certain, from the number of inquiries, that such will be acceptable to many persons. My friends of the spade may consider any hints I may give as too late to be available for the present season, but I have well considered this matter, and find that amateurs generally have not the convenience to winter plants to afford cuttings early, have no means of accommodating early-struck cuttings so as to keep them slowly growing, nor, in fact, accommodation for more than one lot of cuttings and seeds. Those for whom I at present write cannot place the stock plants in heat to force for cuttings, but are to a great extent dependant on the season for the growth of the plants furnishing the cuttings. To advise any one to make up a bed in February for the propagation of plants from cuttings, while his accommodation for wintering the plants is confined to a structure from which frost is barely excluded, would be practically absurd, as the plants would not have grown sufficiently, and, besides, the cuttings so raised would require greater protection when struck than he could afford them. Hence they would become stunted, and instead of gaining time, the cuttings would be later than those put in a month further on, and receiving no check after being struck. It will, therefore, be perceived, that in the case which I shall endeavour to meet there do not exist the means for affording heat with the view of securing and striking early cuttings, but merely protection from frost. With such, however, late cuttings may be struck, and these very often make the finest plants.

By this time subjects which have had no more than protection from frost will have begun to grow, and cuttings may be taken from them with advantage to the plants, as these will become more bushy in consequence, and the cuttings put in now will by the end of May be good plants, blooming well in the summer.

For the purpose of raising cuttings and seeds at this time the bed need not be made so high as earlier in the season. A space 1 foot wider than the frame all round should be marked out, and a bed formed of hot sweetened stable dung, the dung and litter being well shaken out evenly, and beaten down with the back of the fork as the work proceeds. If leaves are at hand they may be used in the formation of the bed, mixing them with the stable manure as the work proceeds, and putting the litter on the sides of the bed. If the bed is of stable litter, a height of 2 feet 6 inches will be sufficient; if the bed is one-third leaves, it may be from 3 feet to 3 feet 6 inches in height according to the quality of the litter and leaves. To secure a steady heat the materials cannot be too well shaken out and beaten. This done put on the frame and lights, and within a week the bed will have heated, when the lights should be taken off, and, after levelling the surface, at 6 inches below this thrust in a stick as thick as the thumb till its point reach the centre of the bed. Draw out this stick daily, and if on holding it tightly in the hand it is not uncomfortably hot the time has arrived for making use of the bed, but if the heat be more than the hand can bear then the bed must not be used until the heat declines.

The bed being of a proper temperature—that is, if a ground thermometer with the bulb 6 inches in the fermenting materials indicates a heat of 90°, and not more than 100°, the operator must decide whether he will strike the cuttings in pots or pans, or in the soil that may be placed within the frame. For bedding Pelargoniums, I think it best to strike the cuttings in two-inch pots, an inch or two of sandy soil, sand, or even finely sifted coal ashes being placed over the surface of the bed, and then 3 inches of sawdust in which the pots are to be plunged to the rim.

Another plan is to cover the surface of the bed with strips of turf from a loamy pasture cut 2 inches thick and the same in width, and to make, at 2 inches apart along the centre of each, holes of about the same size as those formed by thrusting the finger into sand. The strips of turf are then to be placed close together, grass side downwards, on the bed, beginning at one end and proceeding until the area of the frame is covered. The next proceeding is to put in the cuttings, but before doing this it will be necessary to have ready sufficient silver sand to fill the holes in the turf, and a quantity of soil consisting of two-thirds light sandy loam and one-third leaf mould. If the loam is not sandy, then one-sixth of sand should be added to it. Drop the sand into the holes and introduce the cutting, resting its base on the sand; then fill up the hole with sand, and when a row of cuttings is inserted place from three-quarters of an inch to 1 inch of soil all over the turves and around the cuttings. In this manner proceed until the frame is filled. This plan will answer admirably for Pelargoniums, Calceolarias, Ageratums, and all bedding plants of strong growth, or of which the cuttings are of large size; but for Verbenas and Lobelias the turf should be cut into 1½-inch shreds, and holes should be made in them with a dibber at the same distance apart, and the cuttings inserted in the same way as for Pelargoniums.

If pots are used for the Pelargoniums, they should be filled with a compost of turfy loam two-thirds and leaf mould one-third, and a cutting inserted in the centre of each pot, filling up the space around the cuttings with silver sand.

After inserting the cuttings the lights should be drawn on close, the cuttings gently sprinkled overhead, and a thin mat thrown over the glass during bright sun. The sashes should be kept close, and a gentle sprinkling of tepid water given overhead if the cuttings flag and the surface of the bed appear dry, but do not overwater. The tem

perature of the frame should be 70°, or it may range from 65° to 80°. If there be an excess of steam the lights may be tilted or opened at back. Shade from bright sun must be afforded, and when the nights are frosty a double covering of mats over the lights will be necessary, care being taken that they do not hang over the bed, otherwise there will be danger of the frame being filled with rank steam from the dung. When the heat declines the frame should be covered with mats to preserve the proper temperature, litter being placed against the sides.

In a fortnight the Pelargoniums, Calceolarias, and Ageratums will have struck root, and the Verbenas and Lobelias will be well rooted in that time. In any case when the cuttings begin to grow air should be given—a little at first, increasing the quantity until it can be admitted early, or by 8 A.M., if the weather is mild, and it should be reduced to a minimum by 4 or 5 P.M., when by watering the plants overhead and shutting up close the temperature will be increased, and a moisture highly favourable to growth will be secured. The points of the cuttings, or rather plants, should be taken out after they have struck root, and this will cause the plants to become bushy and stiff. The soil is to be kept moist, but the sprinkling overhead will in most cases be sufficient. Continue this treatment until the end of the second week in May; then draw down the lights every day in mild weather after 7 A.M., and shut them up at night, but only to afford protection from frost. The plants being thus hardened-off should be planted out at the end of the month, or early in June, and this is easily done if they are in pots, but if in turf it is merely necessary to cut it between the plants in order to secure to each a small ball, and they do better thus than in any way I know.

As to striking the cuttings in pots or pans I do not recommend it for Pelargoniums at this season, though it may be done if the plants be potted off afterwards; but I do not consider that there is anything gained thereby. However, whether for Pelargoniums, Calceolarias, Ageratums, Verbenas, or Lobelias, the pots or pans should be well drained and the rougher parts of the compost placed at the bottom upon the crocks, afterwards filling to within half an inch of the rim with a mixture of turfy loam two-thirds, one-third leaf mould, and one-sixth sand, well incorporated, the pot or pan being surfaced with silver sand. Insert the cuttings, give a gentle watering, place in the frame, and plunge in the sawdust, the bed being covered with from 3 to 6 inches of that or some other loose material, or set the pots on a layer of sand an inch thick. The cuttings must have shade and a gentle watering overhead to keep the soil moist and the foliage fresh. They will be well rooted in a fortnight; then gradually harden them off. Set a frame on bricks under each corner, and place within it 6 inches deep of rough ashes, clinkers, brick rubbish, or better still, rough gravel; level and place thereon the riddlings of the following compost:—Light loam from rotted turves three-fourths, one-fourth leaf mould, and then 6 inches of sifted soil. Put on the lights and keep them close, and in a day or two the soil will have become warmed and aired; the rooted cuttings may then be planted out, not nearer than 1½ inch or 2 inches apart, but twice that distance should be allowed if there is room. After planting give a good watering with water of a temperature equal to that of the frame, and shut up the lights closely; keep them on continually, except when opened for watering, and protect with a mat in cold, frosty nights. Slight shade from bright sun will be beneficial for a few days until the plants begin to root and grow freely, then take out the points of the shoots, and give air by opening the sashes about an inch at back early in the morning, but on cold days keep them close, or admit less air, and about 2 or 3 P.M. water the plants overhead and shut up closely. Pursue this treatment, keeping them well but not immoderately watered until the middle of May, then harden off, and you will probably find autumn-struck plants cramped in pots over the winter and starved in spring not doing half so well when planted out as these, which should be moved and planted with a ball, giving a good watering after planting.—G. ABBEY.

VINES AND VINE BORDERS.

In an article under the above heading by "H. S.," in the Number for January 15th, the writer begins by criticising Mr. Wills's system of making Vine borders; then proceeds to find fault with him in no measured terms for not denouncing certain recommendations made by me as to the proper temperature for Vines at particular seasons of their growth in the treatise I wrote on the cultivation of the Grape Vine. It may appear superfluous that I should enter on any defence of a monograph, which is on the eve of entering on a fifth edition in as many years, nor would I have done so, were it not that "H. S." in the following passage imputes a motive—certainly a very ridiculous one—to Mr. Wills for his silence on the subject:—"Why has he [Mr. Wills] not already given utterance to his indignation at the barbarity of shutting up a Vine in the midseason of its growth in a mean temperature of 81° for Hamburghs, and 85° for Muscats? Mr. Wills must surely know that the temperature, in which 'proprietors of villa residences, who are not supposed to employ scientific gardeners' [a quotation from my work on the Vine], are recommended to grow them, is wholly unnecessary. Is Mr. Wills's silence to be attributed to the benefit he has received from the application of the author's styptic to the bottoms of his Pelargonium cuttings?"

Now, whatever benefit Mr. Wills's Pelargonium cuttings received from the application of the styptic in question it could not by any possibility influence him or his judgment in regard to the proper temperature in which to grow Grapes, nor prevent his giving public expression to it, however much it might differ from my recommendations on the same subject, seeing that we are perfect strangers to each other, and that he had no interest in the world, except the public good, in making known that he had used the styptic with advantage in propagating Pelargoniums—a discovery in which he certainly preceded me, though I have since verified it.

As to the barbarity of shutting-up Vines in temperatures varying from 81° to 85° of *sun* heat, all Grape-growers of any experience know that these temperatures are by no means the maxima at which it is perfectly safe and advantageous to shut up Vines in the afternoon, and that 100° with a moist atmosphere is perfectly safe; and if "H. S." had as extensive a knowledge of Grape-growing as he seems to have of geography, he would know this. Does he for a moment suppose that Grapes grown in the open air in the countries he refers to, can compare with the best Grapes grown in hothouses in this country? If he does, I challenge him to the proof, after which I shall be ready to admit that the temperatures I have recommended are too high, but not till then.

"H. S." says, "The Vine seems to be very much at home in the valley of the Volga, where the mean summer temperature is 72°." Does he mean to say that at certain hours of the day during some part of the Vine's season of growth the maximum temperature does not reach 90°? the maximum named by me.

In the autumn of 1861 I visited the Vine-growing part of Germany on the Rhine, where, on the sloping terraced banks of that river, the Vines, both root and branch, must, during some portions of the day, be subject to a higher temperature than anything I have recommended for hothouses; but in the absence of a continuation of this high temperature the Grapes are wretched subjects in comparison with the best English Grapes. My observations on the subject in Holland, Belgium, and France led me to the same conclusion—*i.e.*, that the temperature is not sufficiently high to produce first-class Grapes in the open air; and from all I know, founded on the observations of others, the zone referred to by "H. S." affords nothing in the way of Grapes equal to those produced by the aid of artificial heat.

I may remark that I was so struck with the inferior character of the Grapes in the hothouses I saw on the Continent, that I wrote home for three bunches of Muscats, to be sent to meet me in Paris, where I exhibited them at the first great Exhibition of the "Société Impériale et Centrale d'Horticulture" on the 17th of September, and though the three bunches only weighed 10 lbs., they created as great a sensation as if the sea serpent, or some other semi-fabulous monster, had made his appearance. They had the Emperor's gold medal awarded to them, and during three days that I paid a visit to the showrooms the table where they lay was so crowded that I never saw more of them, but left them to the disposal of a friend. On one occasion, when standing with a friend who understood French near the part where the Grapes were, I observed a French gentleman gesticulating very much, and making use of the word "Ecosse;" I asked my friend what he was saying about Scotland, and he replied, "Oh, he is saying that there must be some mistake, for there are no Grapes grown in the latitude of Scotland; in England there are." Now, this worthy Frenchman was, no doubt, well up in his geography, like "H. S.:" but not so in the history and practice of Grape-growing.

At the exhibition I have referred to there were hundreds of samples of Grapes from all parts of France. Few, if any of them exceeded 1 lb. in weight, and such Muscats as I saw there were green, not having been grown in a *sufficiently high temperature*. Those which I exhibited, though only such as are to be met with at our large metropolitan and provincial shows in this country every year, were, as compared with the bunches around them, like Tritons among minnows, both in bunch and berry, and for "H. S.'s" information, I may state that they were cut from the Vines that were, and still are, subject to the barbarous treatment he denounces.—Wm. Thomson, *Dalkeith Park*.

TOWN GARDENING.

(*Continued from page* 190.)

I must here observe, once for all, that I do not profess to give directions for the proper treatment or culture of each plant—that must be obtained by the inquiring reader from your Journal, or from other sources. I am too much in the dark myself as regards the science of horticulture to dogmatise on the subject. It is only here and there that I venture to offer such hints as are the result of actual experience. It will, however, be encouraging to some to know that I had no greenhouse, and that mine was all out-door work, simple plain-saling, as it were.

To return to perennial plants. Auriculas generally do well, but they require renewing after a few years, and change of position. No renewal of soil will do: they decay at the junction of the offshoots with the main stem, and break off. The Polyanthus likewise will grow, but can hardly be said to flourish. The chief difficulty with which I had to contend was the foliage drying up and withering in the summer, to obviate which I used to sow around the plants early in the spring Virginiau Stock, or some other quick-growing annual, which shaded the plant from the sun and generally preserved it. Œnothera taraxacifolia, a bright yellow flower, low and spreading, does well; and I may mention, though out of place, being a biennial, the well-known Eveniug Primrose (Œnothera biennis), which rarely flowers in the first year. It commonly grew to the height of 4 or 5 feet near the walls, and its fragrance is delightful on a still summer's evening; but it has its defects, it scatters its seed all over the beds, and becomes a weed unless well watched and only a few plants are permitted to grow.

The small dwarf Campanula, blue and white; Arabis albida; the Aubrietia; the Fraxinella, red and white; and Saxifraga carnosa [?] all do well and increase. There is a perennial Hawkweed and a perennial Coreopsis, both of which increase; the former is a showy rich brown and yellow flower, the Coreopsis is poor. Fuchsias, the old sorts more especially, flower well, and stand the winter when well established, bnt they require to be cut down in the spring. Potentillas generally do not flourish, but the Geums succeed tolerably well. Aster alpinus, a dwarf perennial, with pretty mauve petals and a yellow centre, does well and increases, and is always admired. Gentiana acaulis, or Gentianella, grows well, looks healthy, and increases by division of the roots; but its beautiful deep blue flowers never appear, not even a bud. On the other hand, King's or Catesby's Gentian grows poor and wiry, looking unhealthy, but flowers freely, both the blue and the white. The Spiderwort (Tradescantia), all colours, but chiefly the purple with golden eye, is a valuable plant, but must be occasionally divided; for if suffered to grow too large, the outer stems become flaccid and trail on the earth, and if tied up to prevent this, the central flowers rot, after rain or watering, and do not come to perfection.

The Lily of the Valley is likewise most useful and agreeable. It will grow at the roots of Lilacs and in corners where nothing else will succeed, the only care required being to prevent its twitch-like roots from roving among plants where they are not wanted. The little yellow and fragrant flower called Musk has likewise a twitch root, and though it dies down in winter, it will live and spring up again the followiug summer. It requires a moist soil, or good watering. Pinks will languish for a year or two, Carnations rather longer, but both require to be renewed. Some of the Indian Pinks, however, succeed better; and I was much surprised on sowing, rather hopelessly, the seed of the pretty little wild Pink (Dianthus deltoides), which grows in the neighbourhood, to find that it was green and healthy during the first year, and the second it flowered well, a mass of bloom, but did not seed.

I must not omit the Clematis integrifolia, bearing a handsome velvety flower of purple and cream colour. I grew this in long iron baskets about 3½ feet in height out of the ground, and it never failed during the whole term of my residence. I had a species of Scabious which likewise continued throughout the same period. I do not remember its name; its leaves grow somewhat like those of the Pine Strawberry, and its flowers are first of a greenish white, and become pink when matured. The London Pride must not be overlooked, which probably has its name from its prospering so well amid smoke and soot; and the blue Cornflower is also useful for variety.

I must now notice a few that will *not* succeed. Money and labour are thrown away in the attempt to cultivate Roses in smoke; they must have pure fresh air. I have tried all sorts, and have bought the dwarfer kinds in pots, and plunged them whilst flowering, only to see the remaining buds refuse to open. The Chinese sorts are the best, if kept well watered and cut in; but these rarely survive the season, and then only to betray melancholy symptoms of decline. I must not, however, omit to state that I have seen in the same town, on the outside of a house much exposed to smoke, a Banksian Rose, which for several years blossomed well, and then decayed and died. Pæonies, Hepaticas, and Pansies will not respond to coaxing. The latter if purchased and planted in the spring will throw out flowers throughout the season charily and diminishing in size; if they survive the winter they degenerate into the smallest Heartsease and fill the beds with seeds. Violets do no better. Garden Daisies immediately begin to degenerate to the common field sorts. Antirrhinums, Columbines, and Salvias make but a poor figure, and will not increase. The Helleborus niger, or Christmas Rose, declines and dies in a season or two. The Phlox tribe will flower during one season, but rarely the next; if they do, it is only to exhibit a few miserable buds. The plant itself will continue for several years, but in a declining state. It is the same with the Delphinium family. I may here state that when I succeeded to the garden I found in it a a plant which, every year for twenty years, continued to grow in great vigour and health to the height of from 3 to 4 feet, according to the season, but never flowered; once or twice there was a slight indication of buds forming in the autumn, but they never came forward. I concluded it to be one of the larger species of Phlox; but, on removing a portion of it into the country, to my surprise it proved to be a fine purple Michaelmas Daisy with a yellow centre. A variety of the ordinary Michaelmas Daisy, which flowers in August, always did well in the smoke; so did a small bushy sort, with flowers not larger than a silver penny, but the remaining sorts did not succeed.

I next proceed to mention bulbous plants. The whole of the Lily tribe will generally thrive, but more especially the large Orange and the White, and they plentifully increase. There is an early orange Lily, also, growing only about 1 or 1½ foot in height, which does well, but does not throw off fresh bulbs so profusely as the larger sort. Lilium lancifolium roseum and splendens succeed, and may be left in the ground all the winter, being perfectly hardy; but in this case the leaves, though they push up with great vigour in the spring, begin to decay before the flower is fully developed. The Turncap Lily, though it grows well, never, or very rarely, puts out a flower; the Crown Imperial is nearly as shy, and the Tigridia pavonia still more so. In the instance of the Crown Imperial it need not be regretted, for the foxy disagreeable odour from the bulb more than counterbalances, in a small and confined garden, any pleasure to be derived from looking at the plant. Hyacinths, Tulips, Cyclamens, most kinds of Iris, and the commoner sorts of Gladiolus, succeed well, the latter, however, requiring some care. Aconitum napellus, so named from the tubers resembling little Turnips, is a delicate and elegant species of Monkshood, and flourishes in smoke under trees or anywhere. I am sorry that I cannot include the Anemone and Ranunculus in this list: there is, however, the common Globe Ranunculus which answers pretty well; and there is a valuable autumnal Anemone, from Japan, growing 1½ to 2 feet high, with a good flower in two varieties, rose and white, but this also requires watching, for it spreads itself in an unaccountable manner. It is neither bulbous nor tuberous, and should be purchased in the plant. Narcissi and Jonquils languish for years, becoming more and more attenuated, but produce no flowers. So likewise the family of Muscari Hyacinths (the Feathered, the Tasselled, the Grape), dwindle in like manner. Neither Snowdrops nor Crocuses do well; the Yellow Crocus is the best; but of these the mice eat the bulbs, and of those which escape, the sparrows peck out the buds to get at the saffron, and litter the flowers about. I have often been angry

with these feathered depredators in the country, when a few modest Primroses have ventured to show themselves, to see them speedily nipped off and strewed upon the ground. Their dust-baths, also, which they are so fond of taking in dry weather, are an awful nuisance, spoiling the surface of the newly-raked beds, and often exposing the roots of plants to destruction. I remedied this, however, in some measure by placing garden-pot saucers filled with water on the spots which they attacked, which the generality preferred; but a few of the old school, bigotted to their ancient ways, still took to the dust, delighting to half bury themselves in it, as a hen does, and to lie basking in the sun. Watering the bed well at the top will prevent this, but it is not always expedient to do so in the morning of a hot day, as it scorches the plants.

Annuals next invite attention. Marigolds, Asters, and Stocks all do well, but I should advise that they be purchased always of the gardeners at the season when they are brought into the markets in bunches for planting out. A penny will buy a dozen, and they are but precarious if raised from seed. The German and French Asters should be purchased in pots just when first putting forth their flowers. They last well, and are very handsome. Lobelia gracilis and Nemophila are also safest if bought in pots, and transferred to the earth. The Lychnis does best if bought in the plant, and with care, cutting the stems down to the roots after flowering, is almost perennial, certainly the scarlet variety will last for three or four years. Convolvulus major and minor, Nasturtium (now termed Tropæolum), Mignonette, Virginian Stock, Clarkia, Godetia, Sweet Sultan, Sweet Pea, Sweet William, Erysimum Peroffskianum, Wallflowers, Zinnias, and Canterbury Bells, purple and white, also succeed. This list might be considerably added to, I have no doubt, but it contains what were abundantly sufficient for my wants, and I only occasionally tried others. Having no space to spare in my miniature garden, I used to sow or plant annuals among and closely around those bulbs which flower in the earlier part of the year, and they were ready in their places when it was time to cut down the decaying leaves of the bulbs.

Of those annuals which will not succeed, I may just mention the pretty scarlet Linum, which I have tried both from seed and by purchasing plants, but it would not be persuaded. Lupins of all sorts I consider a failure, the larger and smaller blue and the rose Lupin especially. The common yellow sometimes put out a few miserable spikes, both in form and colour, so I discarded them. I must except, however, one of the perennial kinds, Lupinus Moritzianus, which does tolerably for two or three years. The Silenes and the Eutocas fail; so, also, do the Gilias, Limnanthes, Lasthenias, Cenias, Monolopias, Schizopetalons, and many others, which I consider only as rubbish in any garden, whether in town or country.

Most of the usual bedding plants will run their summer course satisfactorily, though some better than others. Verbenas mostly do well, the scarlet and the white the best; the former will often stand the winter. All the Pelargoniums succeed, especially the old scarlet. They continue in flower for four or five months, till the frosts cut them down. Latterly instead of throwing them away I used to anticipate the frosts, and in October gave them away among the working men of the town, who nursed them in windows and considered them great prizes. Cinerarias, though pretty while they last, I discarded because they were so soon over, and left only unseemly stumps. For the same reason I did not care for the generality of Calceolarias; but the bright yellow herbaceous sorts are admirable, keeping up a gay appearance throughout the season by simply taking care to cut off the stalks as soon as the heads of buds have dropped their little slippers. Petunias do not relish smoke; as soon as they are brought under its influence the flowers begin to dwindle. I purchased a magnificent plant in full flower of the Double White variety, took it with its ball of earth out of the pot, and plunged it in one of the best situations in a border. The plant continued to look healthy throughout the summer, and buds showed themselves profusely; but the flowers, which at first were the size of a florin, soon dwindled to that of a shilling, then to that of a sixpence, after which they refused to open, and when the frosts came it had at the least a hundred buds upon it not larger than a pin's head. Ageratums, Heliotropes, Pentstemons, and Cupheas all do tolerably; but the last-named make but little growth.

If the reader should be ambitious of a rockery he will find several of the plants already named of a dwarf character succeed upon it, to which may be added the common Bracken Fern, which dies down in the winter, but puts up its fronds again in the spring; the Gazania, which largely increases, apparently unconscious of smoke, sometimes surviving the winter; and, for the season, most species of the Mesembryanthemum. Nor should I omit to state that, if vegetables are desired, Rhubarb and the Jerusalem Artichoke will thrive. I planted them in a very narrow border at the south end under the dwarf wall, and though they had but little sun they yielded well.—Philokepos.

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

March 19th.

First Spring Show.—A heavy sky, a keen northerly wind, drifts of snow, slush under foot, and then a close drizzle—such was the character of Tuesday last, when the first Spring Show of the season took place; but though the weather was about the worst that could have been, not so was the Exhibition, for take it all in all, it was one of the finest which have been seen at South Kensington so early in the season, and that season, too, one of the most unfavourable that could well have happened for the development of the fine productions which were exhibited. These productions were a triumph of horticultural skill, and a proud evidence of what our horticulturists can do in contending with adverse circumstances of climate; for to attain such perfection in cultivation requires years of experience, and to shew flowers as they were shown on this occasion months of unremitting attention, and at last no small degree of courage to expose them in such a day. The Fellows of the Society ought to feel much indebted to the numerous exhibitors for the support which was so heartily afforded under such trying circumstances, and that that support was most fully and generally appreciated we have every reason to believe; indeed, had there been an opportunity, some expression, we understand, would have been given to the feeling entertained on the subject by the Council.

Hyacinths formed the most important feature of the Show, the principal exhibitor being Mr. William Paul, of Waltham Cross, who was far in advance of any other in the size and beauty of the noble spikes which he placed in competition. It would be difficult to say more in their praise than that they were quite equal to those which he exhibited last year, and were remarkable for the same vigour and the same freshness of colour. In the class for eighteen he was first with magnificent spikes of King of the Blues, Princess Mary of Cambridge, and Blondin (new), much paler in colour than the preceding, and broader in the petal; Charles Dickens, Van Speyk, Baron Von Tuyll, all three very fine; General Havelock and Feruck Khan, two varieties closely approaching to black, and both very good; Solfaterre, Koh-i-Noor, Macaulay, Vunxbauk, all excellent, the latter large and very compact in spike, but scarcely so brilliant in colour as last year; Prince Albert Victor, a new and very fine purplish crimson with lighter edges; a splendid spike of Sir Henry Havelock, Grandeur à Merveille, Snowball, a fine spike for that kind, Mont Blanc, and La Grandesse, a large pure white. Messrs. Cutbush, of Highgate, were second with an excellent collection, though the spikes were scarcely so fine as those which they usually exhibit, and which have given them so well-deserved a reputation in connection with this flower. The sorts were Baron Von Tuyll, Charles Dickens, Grand Lilas, General Havelock, Cavaignac, Von Schiller, fine colour; Gigantea, Princess Clothilde, Florence Nightingale, immense spike; Le Prophète, Grand Vainqueur, Macaulay, Duc de Malakoff, Mrs. James Cutbush, Mont Blanc, Snowball, Princess Helena, like the preceding three, a very good white, and Haydn, a beautiful mauve. Mr. J. Kirtland, Albion Nursery, Stoke Newington, and Mr. William Cuthush, of Barnet, were equal third with collections containing good examples of Von Schiller, Sultan's Favourite, Charles Dickens, Grand Lilas, Baron Von Tuyll, Orondates, Mimosa, Argus, Queen of the Netherlands, Maria Catharina, fine in colour though not large in spike, and Ida, yellow.

In the Amateurs' Class for twelve Hyacinths, of six kinds, Mr. Bartlett, Shaftesbury Road, Hammersmith, had a third prize; and in the open class for six kinds Mr. W. Paul was first with splendid examples of Grandeur à Merveille, Prince Albert, Macanlay, King of the Blues, a magnificent spike; Lord Cowley, pale porcelain, fine spike, large bells; and Victor Emmanuel, pale crimson, striped with deeper crimson. Mr. W. Cutbush, of Barnet, was second with very good examples of General Havelock, Macaulay, Mont Blanc, Couronne de Celle, remarkable for its beautiful azure colour; Alba Maxima, and Von Schiller, the last very fine. Mr. Kirtland, who was third, had the same variety and Macaulay very good.

Hyacinths grown in pots and glasses in windows were not as a whole so good as could be desired. Some very good specimens in 48-pots from Mr. Beach, gardener to C. J. Herries, Esq., Sevenoaks, were awarded a first prize, and Mr. Bartlett, of Hammersmith, was second with fair but rather unequally grown spikes in 32-sized pots. For Hyacinths in glasses Mr. Rumsey, Waltham Cross, had a first and Mr. Beach a third prize. It may be remarked that Charles Dickens was shown both in glasses and in pots better than most of the other varieties.

In the class for six Hyacinths, new kinds of 1866-67, the only exhibitor was Mr. William Paul, who had a first prize for Bird of Paradise, Linnæus, Sir Henry Havelock, Blondin, Lord Shaftesbury,

and Prince Albert Victor, which will be noticed more particularly in our Floral Committee report.

In addition to his other fine collections Mr. W. Paul exhibited in the Miscellaneous class upwards of a hundred pots, and received an extra prize. Among the Blues were splendid examples of Argus, King of the Blues, Baron Von Tuyll, Couronne de Celle, Grand Lilas, Blondin, Leonidas, and Bleu Aimable; of the nearly Black kinds, Feruck Khan and Prince Albert; of Whites, Mont Blanc, Snowball, and Alba Maxima; Reds, Von Schiller, Howard, Garibaldi, Princess Clothilde, Macaulay, Duc de Malakoff, buff striped with red; Haydn, mauve; and Ida and Bird of Paradise, yellow. For this collection an extra prize was given.

Narcissuses were not very numerously shown. Messrs. Cutbush were first with Bazelman Major and Lord Canning, white, with a yellow cup, both fine large flowers; Cleopatra, with an orange cup; and in the same way, but with smaller flowers, Jocrisse, Parfaite, and Regulus. Mr. Bartlett was second with, among others, Grand Monarque and Gloriosa, the latter a fine white, with a deep yellow cup. Mr. W. Paul had an extra prize for a numerous and fine collection in the Miscellaneous class.

Tulips, though the day was too dull for them to be seen in their full beauty, yet made a fine display. Mr. W. Paul was first for twelve pots of six kinds, these being Proserpine, violet shaded rose; Keizerskroon, deep red, edged with yellow; Couleur Cardinal, deep scarlet shaded with violet, small but effective; Fabiola, rosy purple and white; White Pottebakker, and Van der Neer, violet shaded rose. Messrs. Cutbush were second with Tournesol, Vermilion Brilliant, Couleur Cardinal, Globe de Rigaud; and Duke of York, red edged with cream white. A similar prize was awarded to Mr. Burley, nurseryman, Bayswater, for a collection containing several varieties stated to be new, among which, Queen, white feathered with crimson, and Bride, crimson and white, were very pleasing.

In the Amateurs' Class for twelve pots, four kinds, Mr. Bartlett was first with Keizerskroon, Vermilion Brilliant, White Pottebakker, and Globe de Rigaud. A fine collection of about one hundred, from Mr. W. Paul, received an extra prize.

Cyclamens, especially the large and beautiful collection from Messrs. E. G. Henderson, formed one of the most effective features of the Show. Very good collections, though not so numerous, were furnished by Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, and others. For six, Mr. Wiggins was first; and Mr. Fairbairn, Sion; Mr. Todman, gardener to R. Hudson, Esq., Clapham Common; and Mr. Butter, gardener to B. Hooke, Esq., Fulham, equal third; whilst for collections not limited as regards number, Messrs. E. G. Henderson were first, Mr. Wiggins second, and Mr. Todman third.

Crocuses.—A beautiful collection was furnished by Mr. Wm. Paul, and received the first prize in the Nurserymen's Class. The varieties most noticeable for their beauty were Sir Walter Scott, a fine large flower, lilac striped with white; Cloth of Silver; Mammoth, large-flowered white; Princess of Wales, a fine pure white; Princess Alexandra, white, pencilled with purple; Prince of Wales, bluish violet; David Rizzio, and Sir John Franklin, purple; and Golden Yellow. Mr. Bartlett, of Hammersmith, had a first prize in the Amateurs' Class with good examples of Albion, Sir W. Scott, Victoria, and other kinds.

Chinese Primulas likewise afforded a fine display, and were almost without exception excellent. For six plants, Mr. Wiggins was first, Mr. Fairbairn second, Mr. Todman third; and for three, Mr. Wiggins was first, Mr. Todman second, and Mr. Fairbairn third.

Lily of the Valley.—Finer examples of this flower have probably never been exhibited than the six pots shown by Mr. Howard, gardener to J. Brand, Esq., Balham, and to which the first prize was awarded. The foliage was equally ornamental with the flowers, which were large and of a beautifully pure white. Mr. W. Paul's pots, to which the second prize was awarded, contained a great profusion of bloom, but the bells though more numerous were not so large. Mr. Todman, Mr. Cuthush, of Barnet, and Mr. Bartlett also received prizes.

Camellias, Forced Shrubs, &c.—Mr. W. Paul received a first prize for a box of Camellia blooms containing excellent examples of Ochroleuca and Fimbriata, white; Eximia, Mathotiana, and Belle Jeannette, red; Lavinia Maggi, Prince de Canino, and Princesse Clothilde, carnation-striped; and La Reine, delicate pink. Mr. Todman, who had also good blooms, was second. For four plants in flower, Mr. Bull, who was the only exhibitor, received a first prize for Valtevaredo, Anna Frost, Tentonia rosea, and another; and a similar award was made to him for a single specimen of Princess Bacchiochi, which, though good, was not so fully in bloom as desirable.

Of forced shrubs the best six came from Mr. W. Paul, who had a fine specimen of the fragrant white-flowered Raphiolepis ovata, the variegated Weigela rosea, and Rhododendron Schilleri, both in fine bloom, Deutzia gracilis, Double Pink Thorn, and lastly a half standard Genista purgans, worked on the Laburnum, with its head one mass of yellow flowers. Mr. Bartlett was second with Kalmia latifolia, a white variety of Rhododendron catawbiense in profuse bloom, Rhododendron Everestianum, Deutzia, and Yellow Ghent Azalea.

In Miscellaneous collections of plants in flower, the first prize was awarded to a numerous one from Mr. Bull, containing six beautiful specimens of the charming Odontogloasum Alexandræ, the brown-apotted O. gloriosum and maculatum, a variety of Phajus grandifolius having the leaves very distinctly striped with cream yellow, several Lycastes, Cypripediums Dayanum, Lowii, hirsutissimum, and concolor, Phalænopsis Schilleriana, Rudgea leucocephala alluded to farther on, the showy Imantophyllum miniatum, variegated Selaginella denticulata, Palms, Dracænas, fruiting Orange trees, variegated Euonymus, several plants of the small white-flowered Rhododendron virgatum, and various Aucubas in flower and fruit, of which the common variegated covered with fine berries and standing about 4 feet high received and well deserved an extra prize. Mr. W. Cutbush, of Barnet, took the second prize with a small well-bloomed collection, containing Tetratheca ericæfolia, Boronia pinnata, Cinerarias, Cytisus racemosus, Mignonette, and fruiting Aucubas; and Mr. Bartlett was third with Azalea amœna, Cinerarias, Hyacinths, Tulips, &c.

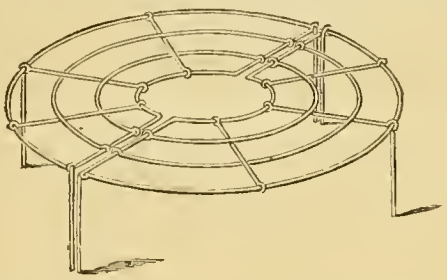
Among miscellaneous subjects were beautiful collections of Roses in pots from Mr. W. Paul and Messrs. Paul & Son, to both of whom extra prizes were awarded. The plants from Mr. W. Paul were remarkable for their fine large foliage, and were, besides, in excellent bloom for the season, especially Madame Victor Verdier, President, Paul Delameilleray, Alba Rosa, Le Rhone, and Madame Willermoz. Messrs. Paul & Son's plants were likewise very good, and some of them were blooming very freely, especially Princess Mary of Cambridge, Lord Raglan, Gloire de Dijon, Devoniensis, Souvenir d'Elise, Maurice Bernardin, and Anna Alexieff were the most noticeable of the others. Mr. W. Paul contributed, besides, several boxes of cut Roses, many of which were excellent; among them were fine buds of Maréchal Niel, Narcisse, Safrano, and Madame Falcot. Pierre Notting was remarkable for its fine, violet-shaded, deep red colour, and that old favourite, Gloire de Dijon, was also fine. Mr. Bartlett, besides wire-baskets filled with Hyacinths and Tulips, had a highly creditable set of Filmy Ferns, for which he received an extra prize; and a similar award was made to Mr. Todman for Azaleas, and to Mr. W. Cutbush for half-a-dozen pots of Mignonette trained so as to form pyramids from 18 inches to 2 feet high, and about 18 inches in diameter at the base.

Sub-Floral Committee.—An unusual number of interesting plants were brought before the Committee at this first spring Show. It is seldom in the height of summer that so many certificates are awarded, and for such choice plants. Mr. Shenton, Biggleswade, Beds., sent small specimens of a seedling Retinospora, golden variety, the plants much too young for any judgment as to their merits. Messrs. F. & A. Smith, Dulwich, sent seedling Azalea Hector, very dark red, upper petals spotted; the flowers dull in appearance. It received a commendation. From the same firm came also a collection of golden Zonal Pelargoniums, not in season for displaying their merits, and which should be seen again. Mr. G. Fairbairn, gardener to the Duke of Northumberland, Sion Gardens, sent a seedling Cineraria Duke of Northumberland, deep ruby-coloured ray florets, too long for an exhibition flower. It was commended as a decorative variety. Messrs. E. G. Henderson exhibited a nice plant of Rudgea leucocephala, also shown by Mr. Bull under the name of Psychotria macrophylla, the former being the correct name. This is a plant of great beauty, and was described last year. Mr. Bull sent Aucuba japonica macrodontha mascula; Aralia spathulata, a very curious and beautiful-foliaged plant, with long, linear, toothed foliage—first-class certificate; Aralia crassifolia, dark green, also distinct—first-class certificate; Agave macrocantha, a curious new form of this section of plants, the short thick leaves furnished with sharp teeth, pointed with a sharp needle-like spine—first-class certificate; Imantophyllum miniatum superbum, much like I. miniatum, so much so that the difference of the flowers as to colour was not perceptible. Messrs. E. G. Henderson received a special certificate for six seedling tricolor Pelargoniums, which the Committee hope to see again at the proper season—Mrs. Grove, Caroline Longfield, Anna Paget, Tamworth Pet, and Emma Cheere were very promising varieties. Pyrethrum Golden Feather was sent by the same exhibitors, but not in a condition at this early season of the year to display its merits as a bedding plant. Mr. W. Cruickshanks, gardener to W. Jones Loyd, Esq., Langleybury, Watford, received a special certificate for a box containing twelve trusses of his seedling Verbena Lady of Langleybury, a pale lilac-striped variety, which was awarded a first-class certificate last summer—a very promising, useful, bedding plant. Mr. Preece, gardener to E. Wood, Esq., Acton, exhibited seedling Zonal Pelargonium Hanger Hill Gem, a flower without any merit. It is much to be regretted that exhibitors should send seedlings so completely out of their season. Messrs. Veitch exhibited a new Orchid not named, probably a Mormodes—a second-class certificate was awarded, it being distinct from others; also Hippeastrum pardinum, a beautiful spotted form of this superb flower, which was awarded a first-class certificate: this was very distinct from any other Hippeastrum ever seen. Mr. Cannell, of Woolwich, exhibited for Mr. Bennett, of Osberton Hall Gardens, a few flowers of a Pansy of the Viola cornuta strain, pure yellow, said to be constantly in blossom, and a very decorative flower.

Mr. William Paul exhibited several new Hyacinths, all of them of first-rate quality. It is impossible to describe the magnificence of Mr. Paul's collection. The spikes of flowers were grand and better than ever before exhibited by him. Lord Shafteshury, a very large single white bell, loose spike, received a first-class certificate; also Blondin, light grey, single flower, compact spike, very beautiful—first-class certificate; Prince Albert Victor, a dark purplish red single

flower of great beauty—first-class certificate; Linnæus, a brilliant deep single rose flower—second-class certificate, one of the brightest varieties grown, the flowers of the spike not quite in perfection; Vunxhaak, a fiery red flower, which was awarded a first-class certificate last year; also Bird of Paradise, which was equally noticed; both continue to maintain their character. It is not our duty to notice the several varieties, but we must add, never were such fine specimens exhibited before; and we hope to see them in their special colours and merits duly noticed. Mr. Paul also exhibited a standard plant of Nosegay Pelargonium Dr. Hogg, deeper in colour than that great favourite Amy Hogg; but at this early season it is impossible to risk any decision on the merits of Zonals. Justice cannot be done to the plant nor to the judgment of the Committee.

Fruit Committee.—Mr. Johnson, gardener to the Marquis of Ailesbury, Sevenoaks, sent Lady Downe's Grape in excellent condition as a proof of its superiority over Ahbee, shown at the last Meeting; and Mr. Holliday, gardener to H. B. Walmsley, Esq., Acton, a very good fruit of the Ripley Queen Pine, apparently upwards of 3 lbs. in weight. For this a special certificate was awarded. Mr. Lydiard, Batheaston, sent Asparagus, and from Mr. Budd came a Cucumber, the result of a cross between Telegraph and Munro's Prolific, like the Sion House, but rather more prickly. James's Long-keeping and Brown Spanish Onions from Mr. Whiting, The Deepdene, and that called Nuneham Park, from Messrs. Cutbush, were also placed on the table to show their keeping properties. Mr. R Holliday, 2A, Portobello Terrace, Notting Hill, exhibited a contrivance called "Paxton's Strawberry Crinoline," consisting of a circular table of



galvanised wire, as in the accompanying engraving, made in halves to put round the plants, in order to prevent the berries coming in contact with the ground. The cost was stated to be £5 5s. per gross. The Committee, however, considered that though the contrivance might be useful to amateurs, yet the cost would prevent its being employed where Strawberries are grown on an extensive scale.

General Meeting.—G. F. Wilson, Esq., F.R.S., in the chair. The business of the meeting was purely of a formal character, and after the election of fourteen new Fellows and the admission of the Worksop Floral and Horticultural Society into union, the Chairman announced that in consequence of the small attendance the lecture, which was to have been given by Mr. W. Paul, would be deferred till Tuesday, the 26th inst., at 3 P.M.

SIZE AND SEPARATION OF GEOMETRICAL FLOWER-BEDS.

I purpose forming one or two groups of geometrically arranged flower-beds—about nine beds in each group. I think I have somewhere seen a remark, that the size of flower-beds should be determined by the distance one can reach over the bed without placing the foot on the bed. I can reach about 2 feet, so presume that no part of a bed should be more than 2 feet distant from a walk.

I should also be glad to know how far apart the flower-beds in the before-mentioned groups should be, so that without interfering with the harmonious blending of the different colours in the beds viewed as a whole, there would still be sufficient space between the beds. I should, perhaps, mention that I intend having them edged with Box, and gravel walks between.—C.

[As you can reach 2 feet, beds of 4 feet in diameter would suit you; but we presume that the rule about reaching was made with the understanding that one foot was placed on the bed. By this means you could extend your hand 2 feet more, and, therefore, your beds might be from 4 to 8 feet in width. By having only one foot on the bed and one on the walk, you can clean the foot from the bed before placing it on the walk if anything from the bed should adhere to it; and, removing the mark of the foot, the bed will retain no trace of your visit. If on grass, in such geometrical groups, and the beds are 4 feet or more in width, the paths should be from 3½ to 4 feet wide. On gravel, if the beds are 4 feet, wide the paths might be 3 feet or even less, but we believe in most cases 4 feet would be more satisfactory.]

GREEN TURF FOR CAMELLIAS.

I have great pleasure in adding my testimony to the value of fresh turf for Camellias. I have used it for the last five years, and my plants never looked so well as they do now. I hope more of your readers may, after reading Mr. Pearson's recommendations, be induced to give it a trial.

In one respect, perhaps not essential, my practice has differed a little from Mr. Pearson's. Before using the turf I place it grass side downwards on a flue, not long enough to dry the soil to dust, but merely to char the blade sufficiently to kill any insects' eggs, &c., that may have been deposited there. In two or three days after potting I give the plants a thorough watering with lime water.—H. F. B.

PROTECTIVE POWER OF AN ORCHARD HOUSE.

My object in writing is to point out the protective power of an orchard-house. When the open air temperature during the severe frost of January was about zero, the thermometer in the orchard-house never fell below 20°, so this was better than Cornwall, where it went down to 15°. Of course, the snow-covered roof, and the short duration of the frost, assisted the orchard-house. Many things in pots placed on the borders, covered with bell-glasses, and these with straw and mats, passed through the ordeal uninjured. The shoots of Figs in pots, with straw round their roots, but unprotected above, are quite green, while against a building, though covered with two or three mats, the extremities seem killed back.—G. S.

WHAT SHRUBS AND TREES ARE NOT INJURED BY GAME?

"E. F. G." asks for some information on this point; I have, unfortunately, a sad experience in such matters, and have given great attention to the subject. In a hard winter like the last, I may say the present, for we have here now, March 12th, heavy snow falling, and 8° of frost, all shrubs and young trees have suffered dreadfully from hares and rabbits. My place is in a valley, and the starved-out mountain hares visited me every night in droves. Large drifts of snow several yards high enabled them to make their way into every place to which they should not have had access, and they climbed up the espaliers, and wall fruit trees like cats. This has also happened in many town nursery grounds, and immense damage has been done.

I hardly know what shrubs suffer least. "E. F. G." is perfectly correct in stating that hares and rabbits will attack a newly-planted clump or isolated bush, no matter what it is, and the smaller it is the more sure is it to be visited and destroyed. I watched my shrubberies and made notes every morning, and found that as in former severe winters, Hollies went first, then Laburnums and Broom. They also ate odd Rhododendrons, and Berberis aquifolium, but not to any considerable extent when in a mass, or when the bushes were of a good size, and dense. It is the bark they want, not the leaves. It is rather odd that hares, in particular, are so fond of Yew and Laburnum, two very poisonous trees. They must take it as a medicine, as we use calomel, &c., to digest other things.

With regard to the Fir tribe, I have invariably found that the Pines go first, then Larch, then the Abies class. I have lost every Scotch Fir and Austrian Pine which has been planted for the last two or three seasons. The Norway Spruce, Silver Spruce, and Balm of Gilead, are merely nibbled, and may come round; but many Scotch Firs 6 feet high are peeled entirely, and hopelessly destroyed.

Allow me to recommend "E. F. G.," when forming a new plantation, to gather his Laburnum seeds, and either sow them broadcast in the woods, or, which is better, raise as many seedling plants in his nursery garden as he can, and plant them for underwood. This will afford food in hard weather, and hares, &c., will touch nothing else as long as any are left; when eaten off the plants come up again next season. Ash is a favourite food also, and I have seen a cartload of Ash tops thoroughly

peeled in a night. I have preserved my young woods to a great extent by throwing down heaps of Ash tops and thinnings in the fields adjoining the coverts; hares like Crabs and the Apple tribe better still. In hard weather I should advise the snow-plough to be used when requisite, and to throw Turnips or Cabbages on the bare part.

In 1860-61 hares ate nearly all my Araucarias. This season, though the frost was more severe, but of not so long duration, Araucarias, Deodars, Cupressus Lawsoniana, Hemlock Spruce, &c., have hitherto escaped; but, perhaps, this is because they had become good-sized specimens, and the bole or main stem was not a salient object.

As "E. F. G." suggests, the difficulty under such circumstances, is to have young plants well established. If we can get three or four years over, we may hope for success. My advice is to plant plenty of undergrowth in young woods, and have as much Broom as possible about the neighbouring banks and hedges, so as to entice the game away from more valuable food. I once saved a plot of young Pines by dragging their tops through the liquid manure hole before planting. This may be renewed in a small home plantation.—Jackson Gillbanks, *Cumberland.*

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

Pleroma sarmentosa.—(Sarmentose Pleroma).—*Nat. ord.*, Melastomaceæ. *Linn.*, Decandria Monogynia. Native of cool valleys near Cuenca, in Peru, and at elevations of 8000 feet. A great acquisition to our greenhouses, being much more beautiful than P. monochætum. Flowers violet. — (*Bot. Mag.*, *t.* 5629.)

Sarcanthus erinaceus (Hairy-stemmed Sarcanthus).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Probably a native of Moulmein, being introduced by the Rev. Mr. Parish. Flowers white tinted with pink.—(*Ibid.*, *t.* 5630.)

Siphocampylus Humboldtianus (Humboldt's Siphocampylus). —*Nat. ord.*, Lobeliaceæ. *Linn.*, Pentandria Monogynia. Native of Peru. Introduced by Mr. Bull, Chelsea. Very ornamental in a warm greenhouse. Flowers scarlet, with purple stamens protruding.—(*Ibid.*, *t.* 5631.)

Oncidium serratum (Saw-toothed Oncid).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monogynia. Native of Peru, and thrives under moderately cool treatment. Flowers chocolate-brown, edged with yellow.—(*Ibid.*, *t.* 5632.)

Synadenium Grantii (Capt. Grant's Milkbush).—*Nat. ord.*, Euphorbiaceæ. *Linn.*, Monœcia Monandria. Among the dried specimens collected by Captains Speke and Grant in their exploring visit to the heads of the Nile was a fragment of a succulent Euphorbiaceous plant, which, having retained its vitality, was taken by Dr. Thomson to the propagating-pits, and being planted, has now developed into a striking green Euphorbiaceous bush, 7 feet high. It belongs to a very curious genus, Synadenium, closely allied to Euphorbia itself, established by M. Boissier in his excellent monograph of Euphorbia and its allies, published in the fifteenth volume of De Candolle's "Prodromus." *S. Grantii* was found by Captain Grant near villages in lat. 3° 15′ N., in February, 1862, and there only. The Kew plant flowered in November, 1866. It is an erect bush, 6 to 10 feet high, with a stout, terete, green stem, few very thick, erect branches, and columnar branchlets thicker than the thumb. The flowers are crimson, and of very peculiar form.—(*Ibid.*, *t.* 5633.)

Peperomia arifolia *var.* argyreia (Silver-striped Arum-leaved Peperomia).—*Nat. ord.*, Piperaceæ. *Linn.*, Diandria Monogynia. Native of South Brazil. Leaves dark green, with silvery longitudinal bands on the upper surface. Well suited for the front of borders in the house for tropical plants. —(*Ibid.*, *t.* 5634.)

Sophronitis grandiflora, *variety.*—A bright scarlet Orchid, blooming in winter. At Mr. Williams's, Victoria Nursery, Holloway.—(*Floral Mag.*, *pl.* 329.)

Camellia—*Mrs. Dombrain.*—Delicate pink. Introduced by M. Verschaffelt, Ghent, being raised by a Belgian amateur.—(*Ibid.*, *pl.* 330.)

Pompon Chrysanthemums.—*Saint Michael*, bright golden yellow. *The Countess*, pink, softening to white in the centre. *Madge Wildfire*, scarlet, with golden-tipped petals. Raised by Mr. Salter, Versailles Nursery, Hammersmith. — (*Ibid.*, *pl.* 331.)

Zonale Pelargonium—*Miss Martin*—raised by Mr. Groom, Ipswich. Soft rosy peach, truss very large and globular.—(*Ibid.*, *pl.* 332.)

Beurré Clairgeau Pear.—"The Beurré Clairgeau is a Pear which ought to have a place in every garden which is not of the most limited extent. It combines in itself so many of the qualifications that go to make a good fruit, that wherever there is room it ought to find a place. Its size is of the largest, and its colour the brightest, its form is most graceful, and its quality in certain situations is excellent. For the dessert it has few rivals, and as its season extends from the beginning of November till January, it is invaluable for keeping up a supply. The tree is of remarkable fertility, and of moderate size. It does not produce a very vigorous growth, and is consequently well adapted either for bush culture, or for pyramids. To have the fruit in the finest possible condition, it ought to be grown in one of these forms. We have seen dwarf bushes laden with fruit equal in size and colour to that represented in our figure, where proper attention has been paid to thinning and exposure to the sun's rays, and particularly so when it was so near the soil as to benefit from the radiation. On espaliers, or against an east or west wall, we have also seen it produced in high condition.

"This beautiful Pear originated at Nantes about the year 1838, in the garden of Pierre Clairgeau, a gardener in Rue de la Bastille of that city. It first fruited in 1848, and that same year he exhibited it on the 22nd of October at the Horticultural Society of Loire-Inférieur. It is believed to have been produced from a cross between the Brown Beurré and Duchesse d'Angoulême. The original tree was purchased by M. De Jonghe, of Brussels, and formed part of his collection at St. Gilles in the suburbs of that city."—(*Florist and Pomologist*, vi., 45.)

GROUND VINERIES.

From no mention being made by Mr. Broome of the inventor of these valuable structures (see page 179), and from all his remarks being confined to the hinged ground vineries of Mr. Wells, I am inclined to think he has not made himself acquainted with some particulars relating to them, and I am sure he will pardon me for supplying some omissions.

Ground vineries were invented by a gentleman in Sussex, well known for his inventive powers and horticultural skill, about ten years since; and the first idea, under the name of the "curate's vinery" was carried out here (Sawbridgeworth), in 1857-8. The ground vineries under the name just given were glass ridges—still in existence—placed over a furrow lined with slates. Across the furrow were placed slight bars, which supported the Vines, so that the bunches of Grapes were suspended in the furrow. They ripened well, but were liable to mould. In 1860-1 the slate flooring was invented here, to which the Vines were pegged down. This is the mode still in use here.

The next improvement was to make these ridges barless by a very simple process, not patented; and these are so light, elegant-looking, and cheap, as to have superseded ground vineries with bars. The difference in expense between these and the recently invented hinged vineries is so great as to be of much consequence to those who employ these structures largely. Two seven-feet lengths of the barless ground vinery, 3 feet wide, with two closed ends, making a 14-feet ground vinery, will cost, painted, and glazed with 21-oz. glass, £1 19*s.*; while a hinged vinery of the same dimensions costs, or did cost, £5 10*s.* For those who require but one or two vineries, and who can afford to pay the extra price, the hinged one is a most agreeable luxury; but when a Vine is well established, so as to require every season an additional seven, or even two seven-feet lengths, a hinged ground vinery becomes very expensive; and when a Vine reaches to 100 feet in length, which one of mine promises to do, it is rather alarming to have to pay nearly £40 for one's hobby, while the same length of a barless vinery would cost under £14. I need scarcely add that home-made barless ground vineries may be constructed very cheaply. I hope to be allowed to correct, in a kind spirit, a few trifling errors in Mr. Broome's paper.

1. They were not at first exclusively employed for Grape-growing. Lettuces* for early spring salads and Strawberries were planted in the first ground vineries employed here after

* Lettuces of the Cabbage kind, such as Tom Thumb, should be planted early in October, and protected as recommended for bedding plants; they come into use in February, when those imported cost from 4*s.* to 6*s.* per dozen, and are very inferior.

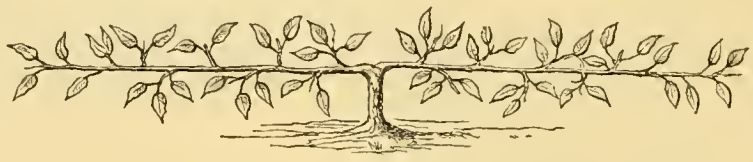
the disuse of the "curate's vinery;" and in 1859 I pointed out the valuable uses they might be employed for, such as "Pears on Quince stocks, Peaches and Nectarines, early Peas, Dwarf Kidney Beans, Cauliflower plants, and many other early vegetables." I mention these trifles only in justice to myself, as Mr. Broome seems not to have been aware of the origin of the ideas he gives.

2. It is bad practice to remove the glass ridge from the Vine in winter; the fruit-spurs often suffer from severe frosts and frozen snow. Here they are never removed except for a short time when the Vines are pruned. If used for bedding plants or other purposes separate structures are necessary—they are cheap enough. All that Mr. Broome says as to the various uses ground vineries can be applied to is correct, although he is rather figurative in saying "a thousand;" still it is on the right side.

3. There is no occasion to give air by lifting the roof or any part of it. The ventilation by bricks placed on the ground lengthwise to support the ground vinery, leaving apertures of 4 or 6 inches (the latter if the garden is warm and confined), between each, was the original idea, and has never been departed from, the success being perfect.

4. The laying down and pegging Peaches, Nectarines, and other trees to perforated slates has not answered well here; red spider, in spite of the slates being strewed with sulphur, constantly injured the trees, and the fruit was not good. A better mode of cultivating fruit trees under these glass ridges is on the double-lateral cordon principle, as in *fig.* 1.

Fig. 1.



The double lateral Cordon Tree.

The two branches may be fastened to a horizontal wire, or supported by slight iron uprights standing 9 inches out of the ground. A ground vinery (*fig.* 2), 3 feet wide at base will hold two rows of these cordons, which are kept in order by summer pinching. Apricots, Peaches, Nectarines, and Pears all do equally well. The Peaches and Pears were in 1866, in spite of the cloudy moist season, remarkably fine. These double lateral cordons should be 21 feet apart in the rows, so that three seven-feet lengths are required for two trees, planted opposite to each other in the central seven-feet length.

5. There is no occasion to admit air at 10 A.M. and shut it off at 2 P.M. From the long experience gained here it is useless trouble, as the ventilation from below is perfect, and no red spider has ever done any injury to the Vines; the evaporation at night is so abundant that the under surfaces of the Vine leaves are drenched with moisture, and red spiders suffocated.

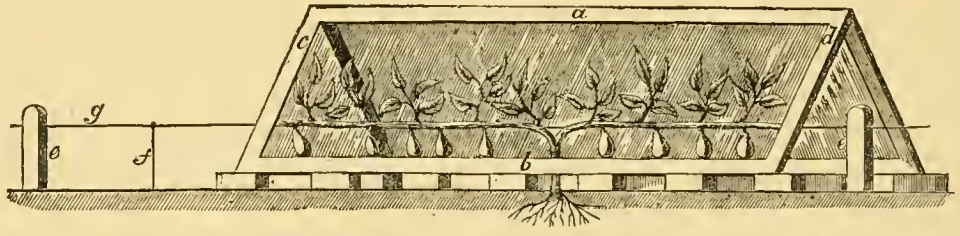
6. The Vines here in ground vineries are never syringed unless dust accumulates on the leaves; they are then thoroughly syringed once just before the fruit begins to colour. The slates are never watered with tepid water; the tepid evaporation at night amply suffices to keep the Vines in health.

Mr. Broome has given some useful hints, for which we owe him thanks; but he seems to have confined himself to one kind of ground vinery, and that the most expensive. He has not given the early history of these most useful structures, and, as it appears to me, has lessened the simplicity of Vine culture in them.

With respect to preserving trees under them from the effects of frost while in blossom, or protecting bedding plants from severe frost, I have elsewhere said that they may be made perfectly frost-proof by layers of straw. To make ground vineries perfectly frost-proof for bedding plants they should be taken from their brick supports as soon as severe frosts commence, and placed on the ground, the two ends closed, so that they are for a time almost hermetically sealed. For two seven-feet lengths, forming a structure 14 feet in length, two or three trusses of straw at a cost of 1*s.* each will keep out the most severe frost known in England. As soon as an interval of mild weather occurs in winter the bricks should be replaced for ventilation, or if the roof is hinged it should be opened. The most convenient size for protecting bedding plants during winter should be of the following dimensions:—Width at base, 42 inches; slope of roof, 28 inches; depth in centre, 20 inches. The cost is of course increased by increase of size, but the large size will be found more economical for bedding plants. Four seven-feet lengths placed so as to form a shelter 28 feet by 3½, closed at each end, will hold a nice little cottage-garden selection. These large glass ridges are also on the whole more economical for Vine culture, as two Vines may be, as they are here, cultivated under one ground vinery, so that there is a saving of something considerable.

In the usual single-vine ground vinery the question is, Which is the better mode of training—pegging down to the slates or training the Vine to a stout iron wire, supported by perforated iron rods about 9 inches from the slate-formed surface, so that the bunches of Grapes are suspended, their tips merely resting on the slates? In 1865 I strictly watched the ripening of my ground-vinery Grapes, and I found that the earliest to ripen were the suspended bunches with their ends resting on the slates.

Fig. 2.



a. The top bar with a groove half an inch deep.
b. The bottom bar with a rebate.
c and *d.* The end bars, each grooved half an inch deep.
e, *e.* Straining-posts 4 inches square, 20 yards asunder, less or more as required.
f. Upright iron rods flattened and perforated at top to pass the wire through.
g. The wire the thickness of whipcord.

With regard to the culture of Strawberries under ground vineries, but few amateurs have yet realised its advantages. The fruit are of the finest possible flavour, they are kept from injury by storms and birds, and all the ills they are liable to. The ground vinery best adapted to Strawberry culture is my favourite the harless kind, 3 feet wide at base. This will hold three rows of Strawberries, which may be 4 inches plant from plant to plant in the rows. To carry out this mode of culture thoroughly a fresh plantation should be made every year in August; and if the plants are taken from pots which have borne a crop in the forcing-house, all the better, otherwise they may be strong runners that have been potted in small pots in June and July. A plantation may be suffered to bear two annual crops; but the second year's crop has been found here to be not so abundant as the first.

In gathering Strawberries from ground vineries, one side of the roof on hinges, so as to be easily opened, is, doubtless, a luxury—the mode of giving air first suggested by the inventor; it would be curious to bring forward one of these original one-side-hinged ground vineries. Whether or no Mr. Wells's patent would be infringed by making one like it, I am not able to say; I should hope not. The method here is, when pruning or gathering Grapes, Strawberries, &c., to have a stout stick, 2 feet long, with a cross piece at top; the ridge is lifted and rests upon this crutch till the work is done. The barless ridges

are very light, and the lifting up one side of a seven-feet length not oppressive; but there is no doubt that one side of the ridge on hinges would be more agreeable. This mode should be followed by Mr. Wells (there is not the least occasion for hingea on both sides), and then he could lower the price of his hinged vineries, so as not to make them objectionable to amateurs with purses not overflowing.

Mr. Broome'e advice as to planting is good, as are, indeed, most of his remarks. The trifling errors I have noticed, I hope kindly, have arisen from his want of experience in the management of ground vineries. To me it seems highly necessary to simplify all new modes of culture, and this feeling alone has tempted me to write this article.

I must not conclude this, I fear, too tedious paper without giving a caution to the planter of Vines in ground vineries. A strong Vine, 6 feet or more in length, and capable of bearing ten or twelve bunches of Grapes, is often left at its full length and suffered to bear profusely the first season. This is ruinous to the Vine, which is often two or three years in recovering its normal vigour. A Vine from 6 to 8 feet long should when planted be cut down to 3 feet, or one of smaller size to 18 inches or 2 feet. Three or four bunches may be allowed the first season, certainly not more. If the Vines are trained to a wire 9 inches from the surface—the most eligible height, they may in time require more head room. This is easily given by adding a brick to each brick originally placed on the ground for ventilation; even a third brick may be added, so as to have a four-inch brick wall of three courses, with apertures for ventilation. In confined town gardens the single row of bricks may not admit air enough: it should, therefore, be known that two or more courses of bricks may remedy the evil.

With regard to the sizes of these vineries for the million—in 1877 they will be in every respectable cottager's garden—there are three:—

No. 1.—Thirty inches wide at base, 15 inches high in centre. This will hold one Vine, pegged down in the centre, and give room enough for many years' growth. My finest Vines are in No. 1 size.

No. 2 is 3 feet wide at base, 18 inches high inside. This size will hold one Vine in the centre, trained to a horizontal wire 9 inches from the surface, or two rows of double cordon Peach, Pear, or Apricot trees.

No. 3 is 3½ feet wide at base, slope of roof 28 inches, height inside 21 inches. This will give room enough for two Vines pegged down to the slates, and requires two ventilating bricks on each side.

I can see no reason why there should not be a No. 4, 4 feet wide; it would make a roomy place for bedding plants, salads, and Strawberries.

If your readers have patience enough to follow me through this article, they will, I think, see that I am what Sterne calls "hobby-horsical" about ground vineries. The truth is, that from the first moment I saw one at the residence of my friend, the inventor, and found him hesitating about making the hinged roof for ventilation, on the score of expense, as he intended them for "the million," and at once adopting my orchard-house idea of low ventilation by placing bricks at intervals to support the ridge, I prognosticated, to use a hackneyed phrase, a great future for these simple garden structures. Ten years' experience has confirmed all my anticipations.—Thos. Rivers.

PLANTING-OUT VERBENA CUTTINGS.

I can fully endorse all that your correspondent stated at page 176, as to the advantages of planting-out spring-struck cuttings of Verbenas. I have adopted the system for some length of time, and have found it answer most admirably; but in one respect I carry it out somewhat differently.

When my cuttings are all well rooted, which they invariably are about the middle or latter part of March, I make up a bed of half-spent dung, put on the frame, and insert a testing stick. In the course of a few days the bed is ready for the plants; I then shake them carefully out of the pots, and have ready a number of square pieces of turf of about 3 inches by 2½ inches. I then scoop a piece out of the centre of each, put in a little sand, and press a little more soil round the roots. The siftings from under the potting-bench answer well for this purpose. I next place the turves as closely together as possible, add a little soil to cover all over, and water. In this way much trouble in watering is saved, and those who adopt the system will be rewarded with strong, stiff, healthy plants. At bedding-out time they may be removed from the bed without receiving any severe check, each having a mass of roots.

Where pots are a consideration, the above plan relieves the gardener from all anxiety on their account, and as to air, I recommend the same treatment as that stated at page 176.—Berkshire.

HARDINESS OF TRITELEIA UNIFLORA.

I write to say that with me Triteleia uniflora is perfectly hardy in the most ordinary garden soil, and without the least protection in winter.

In the autumn of 1865, I purchased half a dozen bulbs and planted them out, understanding them to be quite hardy. These are now a clump, with, at the present moment, seven blooms fully expanded, and ten more in bud. They seem to increase rapidly, and the offsets flower later than the older bulbs, thus prolonging the blooming season. The flowers are as large as a florin, and beautifully tinted with a soft greyish blue; they remain totally unaffected by the changeable weather of the last few days. On the whole, I consider it one of the most exquisite gems of the spring garden. I wonder why it is called "uniflora?" With me each strong bulb sends up two or three footstalks, three of which have this year produced two flowers from one spathe.—A. S. M., *Brentford, Middlesex.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

Another week of winter weather has elapsed, during which rain, sleet, and snow have saturated the ground and prevented the putting in of every crop usually sown or planted in the present month. Even gardens well managed were scarcely ever known to be so little under crop as they are at the present time, or to contain so little either on or in the ground. Scarcely anything is to be seen except mere vestiges of some of the hardier Greens. *Asparagus*, be sure to salt the beds of this and *Sea-kale*; little and often is our maxim. The time is approaching for planting Asparagus; it should not be planted until 6 or 8 inches high. *Cauliflowers* will require to be forwarded by means of hand-lights or other modes of protection, and their growth promoted by stirring the soil and the application of liquid manure. *Carrots*, see to crops of the Early Horn; slugs are very destructive. Nothing, probably, is better than cinder ashes riddled extremely fine and the mere dust taken out; these sown thickly over the ground present such a sharp macadamised kind of surface, that the snails and slugs are at the last point of starvation before they will venture on it. As the cropping has been thrown out of its usual course, it will be necessary to make some additional sowings. *Cabbages*, sow Early Hope or Early Sugarloaf, as such will probably be early in demand; also the Yellow *Savoy* and some *German Greens*. *Kidney Beans* had best be sown in pots in a cool frame for planting out when the ground is sufficiently warm. *Peas* that are being forwarded under glass should be planted out as soon as the weather will permit in rows running east and west, and let them be sticked on the north side only. *Beans*, plant a full succession of the Windsor. *Potatoes*, forward some more early, by sprouting them in a warm place. Sow *Onions*, *Leeks*, *Carrots*, *Parsnips*, *Spinach*, *Turnips*, *Lettuces*, and the Large Red *Tomato* in a little heat.

FRUIT GARDEN.

If the weather prove clear the sun will have great power on fruit trees against south walls. The days being so long blossoms of Apricots and Peaches will expand, and more than usual protection ought to be provided for them, as severe nights frequently occur for some time after so much frost and snow leave the ground. Eradicate insects by all possible means. See that all the winter and early spring work amongst fruit trees is brought to a close forthwith. Finish root-pruning with all luxuriant trees; most persons may have observed the effect of moving a large Pear tree very late in the spring, it generally becomes covered with blossom-buds. Such, in degree, will be the effect of root-pruning at this period.

FLOWER GARDEN.

See that rolling, mowing, &c., proceed in due order. Now is the period to lay the foundation of a fine lawn, the pride of English gardening. Let all fresh turfing be completed forthwith; it is a good plan to scatter rough old tan thinly over it, as a screen from the sun, until the roots take hold; some waterings are also essential. Early herbaceous plants over-

grown may now be divided, the exterior portions of the stools should be reserved and the interior rejected. Be sure in planting again to introduce fresh soil. Cut in all coarse evergreens or shrubs before the buds become too much advanced. This is a good time to clip Holly hedges. Should the weather continue unfavourable very little can be done to florists' flowers; still, if the sun break out warmly in the middle of the day it will be well to protect the frames containing Carnations, Auriculas, &c., at night.

GREENHOUSE AND CONSERVATORY.

The climbers in the conservatory will now want attention, at least once a-week, whether under the roof or on pillars or trellises, in tubs or in pots. Prune off superfluous shoots, stop or pinch the points of gross leaders, to induce a flowering habit in those which produce blossoms from the axils of their leaves, and keep them neatly tied and trained. Large Acacias or gross climbers will require abundance of water; those growing beneath the floor level or under stone covers should, when watered, have a thorough soaking. In the greenhouse keep up a lively circulation of air all the early part of the day, and dispense with fire heat as much as possible. Where a greenhouse of a mixed character has stove as well as common greenhouse plants in it, a climate superior in point of heat to the common greenhouse must be maintained, and in order to do as little mischief as possible through the compromise necessary, let the advances in point of extra heat be made at all times during a considerable degree of light. To this end practice the early shutting-up, so much insisted on by all good gardeners, and on such occasions take care that the fire has been very low or out for an hour or two previously. The heat thus secured for the evening, if accompanied by sufficient atmospheric moisture, will establish a healthy and short-jointed growth. Make a sowing of tender annuals if not already done. Pot off Balsams, Cockscombs, &c. These plants, however, will do better by far in a frame with fermenting materials, close to the glass, and well matted up at night. If the weather continue unfavourable, and the potting-shed is situated so that injury is likely to result from carrying the plants to and fro, erect under the stages, or in some other convenient place, a temporary potting-bench, take in soil, and allow it to acquire the warmth of the house before using it. Look over every plant carefully, and let all that may require it receive attention. After potting keep the house rather close and warm—that is, warmer and closer than usual for a week or so, and at any rate increase the temperature of all plant-structures a few degrees, and slightly shade the newly-potted plants should the sun be bright and warm.

STOVE.

Attend to regular shifting, watering, and a free healthy circulation of air early in the morning, but take care to avoid draughts. Continue to cut down, disroot, and repot those plants which have been flowering through the winter. These will be better removed to a bottom heat of 80° in some spare pit or frame and shaded, treating them as young Pines until they break, when they may, if necessary, be returned to the stove for a time. Follow up the shifting and top-dressing of Orchids in general; syringe freely those on blocks and in baskets. Let this be done early on lively and sunny mornings, giving additional air, with a little fire heat, on such occasions to correct any excess of moisture. Growing Orchids should now be shaded for two or three hours in bright days, more especially those which have been disturbed at the root. These would be far better removed to a house or pit by themselves, as the established plants which have remained undisturbed will enjoy more sunshine.

PITS AND FRAMES.

This being the season for the importation of Tuberoses, they should be procured at once and potted in a mixture of sandy loam, and a small portion of either very rotten sheep or cow dung. They should then be placed in a hotbed or forcing-house. They do not require any water for many days after potting, and but little until they begin to grow, when manure water should be occasionally used. As the plants advance in growth they may be removed to a warm conservatory for blooming, or planted out in a clump after being hardened off a little if the season is warm. Look over the pits and frames, and attend strictly to watering any plants that are dry. If any plants require a shift before bedding-out time it should be now given to them. Continue potting off from cutting-pots, &c. Attend to shifting Lobelias as they advance in growth. Bouvardias should be shaken out and repotted in light sandy soil, and placed in a growing heat of about 65°. Continue making cuttings constantly of Verbenas, Fuchsias, Petunias, Dahlias, Pelargoniums; and shade carefully newly-potted Stocks, and, more especially, cuttings. Remember, in making cuttings, that the leaf should not be first allowed to flag, and then an attempt be made to restore it by abundance of water; the leaf must never be allowed to droop.—W. Keane.

DOINGS OF THE LAST WEEK.

A second winter, and that too when many buds of fruit trees were in a forward state, and, when wet from rain, snow, and sleet, in not the best condition for resisting such a severe frost as visited us on Saturday morning. Some of the days were too wet and slushy to do anything out of doors. When moderately warm a lot of Pelargoniums were potted, and a number of Scarlet Pelargoniums were shaken out of the pots in which they had stood thickly all the winter, and placed singly in turf pots, made by cutting the turf with a sharp knife into pieces about 3½ inches square, and between 2½ and 3 inches deep, a piece being taken out of the centre. Into these the roots were placed along with rich light soil, and the plants were then set under some old lights on the vinery border, as alluded to last week, after repairing these lights in the shed. The end of last week, however, was too cold for such work, and therefore when dry and, as on Saturday, with a bright sun melting the frozen ground in places where it could have access, opportunity was taken to point Pea-stakes out of doors, make up hotbeds, &c.; and indoors, when the weather was unfavourable, washed pots, cut shreds, made tallies, repaired boxes, and prepared flower-stakes, after cleaning snow from the paths, gutters of houses, &c. We will just allude to pots and sticks in passing.

Cleaning Pots.—Independently of appearances, all plants do best when the pots in which they are grown are clean. No rubbing of pots will ever be a substitute for washing them. If a dirty pot or a wet one is employed in potting, it is almost impossible for the ball afterwards to turn out clean. When pots are very dirty and covered with green slime, a little soda may be used with propriety in the water; but, except in such extreme cases, we prefer clean hot water, frequently renewed, and no assistance beyond a brush or coarse cloth and plenty of muscular power. We like the water pretty warm at this season for three reasons: it is much more comfortable for the washers, the work is better and more quickly done than with cold water, and the hotter the water the sooner will the pots be thoroughly dried. Old pots, however frequently used, when thus well cleaned, are quite as good as new ones from the kiln, in one sense better, as the latter for particular purposes require to be soaked and then dried before being used. In general cases the pots are thoroughly washed inside and outside; but in many cases of small pots that will be filled and emptied often in a few months, and more especially if the pots are to be set or plunged in a bed, we direct our attention chiefly to the inside of the pot. We would wish all amateurs who might chance to forget all this, to have it written up at their potting-bench, "Never use a pot twice without washing." We know the injunction is too much neglected, and bad pots are often blamed when the fault ought to be ascribed to want of cleanliness.

Making Tallies is one of those operations with which we would advise amateurs with small gardens to have nothing whatever to do, as tallies of all sizes are advertised at prices at which neither the amateur nor his man could ever hope to make them. In larger gardens, when an odd piece of good splitting deal can be obtained for smaller tallies, and a piece of oak or ash for large out-door ones, the making of them occupies time, when inside work might be scarce in unfavourable weather, and it is well when such matters do not require to be attended to in fine weather. Besides, for many temporary purposes tallies require but little making, little more than cutting them smooth on one side with one or two strokes of the knife. Neat tallies are bought at a much cheaper rate than they can be made in gardens.

Sticks.—The same as a matter of economy may be said of sticks. When they must be bought, those advertised at certain sizes are cheaper than they could be made at home, not only on the principle of the division of labour, but because odd pieces of wood can be made the most of. Why then make or point sticks at home at all? First, because as a matter of taste we like them better, and secondly, because in the case of all small sticks, if collected at home, they cost nothing but the preparation. We have nothing to say against the little sticks

painted green, blue, &c., for those who like them, but we would rather, when a single stick is necessary, have one as inconspicuous as possible. The white sticks made from double laths so commonly in use are to us only endurable when age has made them modestly brown. We, therefore, like better sticks with the varied coloured inconspicuous bark of the Hazel, the Cherry, the Apple, the Pear, and even the slender shoots of the Currant. Prunings in the garden will, therefore, supply at little cost a large number of little sticks from a quarter to half an inch in diameter, and from 12 to 18 inches long. A piece of undergrowth being cut down in a wood; before it was faggoted up we selected many bundles from the size spoken of above, up to those 1 or 2 inches in diameter, and of various lengths, and the bundles of the smallest sizes were prepared in the stormy days. This is much more easily done now than when the shoots had laid longer, as the side spray was easier cut with the knife, and the pointing more easily effected. In pointing such sticks from the smallest size up to those about the thickness of a finger our plan is to make only two cuts with a sharp knife, the first removing half the thickness of the shoot, and the next leaving less than the quarter thickness for the point. These small sticks when thus done, or rather as it is done, are laid in sizes, straightened first if they want it, and then tied in bundles to keep them straight, and if wanted soon are placed over the furnaces to dry all vitality out of them before using them in pots. This drying is necessary in many cases, otherwise the sticks would root in pots, if the latter were in a good heat. Fuchsias grown out of doors on the stool system make neat little sticks, but they must either be well frosted, which leaves the bark ragged, or they must be well dried before using, or every shoot, if in a warm place, will root in the pot where it was only intended for a support. Some years ago we could have had a plantation of young Apple bushes from sticks thus rooted, though they would not have rooted if planted out of doors.

KITCHEN GARDEN.

From what has been stated, little has been done in the open garden, and the severe weather only induced us to put more Sea-kale in the Mushroom-house than we intended, and if a change do not take place soon, we may also be induced to take up a piece more Asparagus. Our last piece under glass is just peeping through the soil, and we did not wish to take up more if we could help it. In some of the worst days we did not uncover Potatoes. Radishes, &c., as there being but little or no heat below them they would not sustain any injury if they had a night of twenty-four or even of forty-eight hours. We could not thus use Cucumbers in dung-beds, though one snowy day we merely uncovered a small portion of the lights, as the heat with long-continued darkness would be apt to draw the plants, and make them tender and impatient of the sun. Even though uncovered almost every day, they had been used to such dull weather that we were obliged to shade a little during the brightest part of the Saturday. It is best to do with little or no shading, but when the changes are sudden from dulness to brightness, a little shading will enable the plants, as it were, time to gather up their energies to meet the force of the sunbeams. A great point will be gained if, when this shading is attended to, it remain not a minute more than is necessary. Do what we will we cannot give to a plant that which it receives from the sunbeam. Shading rightly given often remains on not for minutes but for hours after it is not wanted. Owing to this simple matter cuttings that would strike well in a certain time do not strike in double the time, but become weak and elongated upwards from an excess of shading. This has led us with many common plants at this season, or indeed at any season, not to shade cuttings at all, but to neutralise a bright sun by keeping the cuttings at a greater distance from the glass, and checking evaporation by a slight jet of water from the syringe.

The mention of Cucumbers reminds us of a discussion some time ago, on the comparative merits of hot-water pits or houses, and dung-frames or pits. Our opinion is, that each may be preferable to the other according to circumstances. For winter work we prefer, as giving least trouble, a lean-to house with a steep roof, or a span-roofed house. In either case with plenty of heat at command, the plants would do well from the abundance of light they would receive. In *frames and pits* with a flat roof, the great drawback is the want of direct light in the dull months of the year. At such a time with plenty of manure, a frame is rather better than a fixed flat pit, because you can raise your frame so as to take off the flatness of the glass. For winter work it is always an advantage to be able to go inside and do the necessary work, though there is much truth in what our elder brethren say, that hot water does away with the attention that was requisite to secure Cucumbers in beds and frames heated by dung in winter. After Christmas is past, and the frame or pit is so narrow that all the work has to be done from the outside; then but from the additional attention there is but little to prefer between hot water and dung heat, provided there is plenty of the latter to do all that is wanted. In the latter case there is no expense for fuel, and the manure is useful for the garden when no longer capable of affording heat. Some of the greatest admirers of hot water for everything are beginning to see that they would have been wiser to have kept some of their hotbeds, and thus have secured a supply of manure for the garden, instead of all the manure going to the park and the farm.

Banked-up our frames with litter, fastened small spouts in front to prevent the rains dripping from the sashes and passing into the bed, a matter of importance for keeping in the heat, and covered all round with a layer of laurel boughs. One advantage of having a bed or a pit partially sunk is, that the sides are less exposed. The position, however, must be dry.

Peas.—It is only right we should state here in the way of a caution, that in one of the snowy days when the roofs of the orchard-houses were covered with snow, merely as a precautionary measure, we smoked the house well again with bruised laurel leaves. This did no harm to anything, though there were Deutzias, Dielytras, Cauliflower, Lettuces, &c., in the houses, except the Peas, which were planted out lately. They were, no doubt, a little tender. The upper leaf or two hung as if frosted, and if we had not noticed the appearance before there was much frost, we should have blamed the frost for it. The centre of the shoot, or the axis of growth, is all right, the lower leaves are scarcely if at all affected, and we believe in a few days there will be little sign of anything wrong, but we mention this that those who have Peas in a house may be careful in this respect. We mentioned the other week, that they will not stand even when in an advanced state to be syringed with liquids, which can be thrown against Peach trees in the same house with impunity. In a house, at any rate, our experience leads to the conclusion that no liquid except clean water should go over their foliage.

FRUIT DEPARTMENT.

Strawberries.—Some weeks ago we mentioned seeing little of the green fly on Strawberry plants for years, but it has appeared on the plants in the Peach-house just when in bloom, and not one is to be seen on the Peach trees. On a snowy day the Peach-house was smoked with a little tobacco, and bruised Laurel leaves above it, twice or thrice during the day, leaving the fumigating-pots only half an hour at a time. We never think of smoking during the day, unless in such exceptional circumstances. The fly was pretty well destroyed, and nothing else in the least injured, not even some young Peas in the house; but, then, the smoking was not so strong, and only for a short period at a time. We have had young Peas injured by tobacco smoke and burned tobacco paper when the plants in the house were young before transplanting. The prussic acid in the cool smoke had just been enough for them in the orchard-house, and had we thought it would have affected a single leaf we would have let the smoking alone, or covered the Peas with something until the smoke had gone.

As hinted at last week, the snow threatening to be severe, we shook some litter over the Apricot trees and Peach trees, the former one mass of fruit-buds, and fastened some Laurel boughs over the litter, which will remain on until the weather changes. Some Pears on bush pyramids had their blossom-buds very forward, and we tried some Laurel boughs round them, but we soon saw the remedy was worse than the evil; for the Laurels formed such a hiding-place, that in a few hours hundreds of buds were lying on the ground, as tomtits and bullfinches could work unseen. The buds, however, looked so much affected in consequence of being alternately soaked and frosted, that in the severe frost of Saturday morning we sprinkled a little litter over the trees before the sun touched them; serving, also, the most forward of the Gooseberries in the same way. With the precautions previously adverted to, and the noise of the gun now and then, we have as yet suffered much less than last year in having the buds of bushes and trees destroyed by birds. Gooseberries, especially, have as yet been little touched, but are getting very forward in places, and a little litter may save the fruit.

ORNAMENTAL DEPARTMENT.

Some of the work here has been already alluded to. In a

fair day plants were moved to the conservatory. In bad weather plants were fresh potted, lots of cuttings inserted, seedling Petunias, Lobelias, &c., pricked out and planted where a comfortable heat could be afforded so as to encourage them. During this cold weather in plant-houses and forcing-houses but little air was given. Even in sunny days, as on Friday and Saturday, the sun was allowed to raise the house from 5° to 8° before any air was given, and then almost solely at the apex of the roof. When sun was expected the fires were allowed to go out, and the heating medium thus becoming cool before the sun heat told powerfully on the house, but little air was wanted to sustain a nice genial temperature. This in a Peach-house, where the average temperature at night lately has been from 50° to 55°, and the day temperature in dull weather seldom above 60°, we preferred in such a bright day as Saturday, with a little air early given, that the house should rise gradually to 75° or 80° rather than have it lower by admitting more cold air, freezing hard all day, where the sun did not reach. With the pipes rather cool, a few degrees more merely of sun heat with a little air, to prevent any accumulation of hot vapour, would be better for the plants than a lower temperature from the introduction of more cold air. The Peach-house was almost the only place where more than the exclusion of frost was aimed at. That had front air on Saturday, and only a little, not so much for the Peaches as for the Strawberries in bloom; very small openings ensure a circulation. Many plants suffer in such days from fire heat and sun heat acting together.—R. F.

COVENT GARDEN MARKET.—March 20.

The present inclement weather interferes much both with supply and demand, and interrupts our continental traffic. We have still a large quantity of inferior sorts of Apples sent in, however, and a few good dessert Pears may be had. Potato trade a little better.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes	each	0	6 to	0	8	Leeks	bunch	0	6 to	0	0
Asparagus	bundle	8	0	12	0	Lettuce	per doz.	2	0	3	0
Beans, Kidney, per 100		3	0	4	0	Mushrooms	pottle	2	0	3	0
Scarlet Run, ½ sieve		0	0	0	0	Mustd. & Cress, punnet		0	2	0	0
Beet, Red	doz.	2	0	3	0	Onions	per bushel	4	0	5	0
Broccoli	bundle	2	0	3	0	Parsley	per sieve	6	0	8	0
Brus. Sprouts	½ sieve	0	0	0	0	Parsnips	doz.	0	9	1	3
Cabbage	doz.	2	0	3	0	Peas	per quart	0	0	0	0
Capsicums	100	0	0	0	0	Potatoes	bushel	4	0	6	0
Carrots	bunch	0	6	0	8	Kidney	do.	5	0	6	0
Cauliflower	doz.	6	0	10	0	Radishes	doz. bunches	1	0	1	6
Celery	bundle	2	0	3	0	Rhubarb	bundle	0	9	1	0
Cucumbers	each	2	0	3	0	Savoys	doz.	3	0	4	9
pickling	doz.	0	0	0	0	Sea-kale	basket	2	0	3	0
Endive	doz.	2	0	0	0	Shallots	lb.	0	8	0	0
Fennel	bunch	0	3	0	0	Spinach	bushel	5	0	0	0
Garlic	lb.	0	8	1	0	Tomatoes	per doz.	4	0	0	0
Herbs	bunch	0	3	0	0	Turnips	bunch	0	6	0	0
Horseradish	bundle	4	0	6	0	Vegetable Marrows	dz.	0	0	0	0

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	2	0 to	3	0	Melons	each	0	0 to	0	0
Apricots	doz	0	0	0	0	Nectarines	doz.	0	0	0	0
Cherries	lb.	0	0	0	0	Oranges	100	5	0	10	0
Chestnuts	bush.	10	0	18	0	Peaches	doz.	0	0	0	0
Currants	½ sieve	0	0	0	0	Pears (dessert)	doz.	3	0	6	0
Black	do.	0	0	0	0	kitchen	doz.	2	0	4	0
Figs	doz.	0	0	0	0	Pine Apples	lb.	6	0	10	0
Filberts	lb.	0	0	0	0	Plums	½ sieve	0	0	0	0
Cobs	lb.	0	9	1	0	Quinces	doz.	0	0	0	0
Gooseberries	quart	0	0	0	0	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	15	0	30	0	Strawberries	oz.	3	0	4	0
Lemons	100	5	0	10	0	Walnuts	bush.	10	0	20	0

TRADE CATALOGUES RECEIVED.

Peter Lawson & Son, George IV. Bridge, Edinburgh, and 28, King Street, Cheapside, London, E.C.—*Catalogue of Agricultural Seeds.*

John Salter, Versailles Nursery, Hammersmith, London, W.—*Descriptive Catalogue of Chrysanthemums, Pyrethrums, Hardy Variegated Plants, &c.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Books (*A Subscriber*).—You can have the Dictionary free by post from our office, if you enclose sixty-eight postage stamps with your address. (*Vicarius*).—Such a work as you require will be published about the close of this year. There is none such at present. If you enclose twenty postage stamps with your direction, you can have Keane's "In-door Gardening" free by post. It contains much of the information you need.

Seaweeds (*Ellen*).—No book answers your wishes so entirely as "Common Seaweeds," by L. L. Clarke, published by Warne & Co, London. It describes them in plain language, has some coloured portraits of Seaweeds, is accurate, and the price only 1*s*.

Old Tan for Ferns (*E. M.*).—You may safely mix it with the soil for Ferns in your rockery under glass. No 1, Onychium japonicum; No 2, a Selaginella, but specimen imperfect.

Glass Edging Tiles (*Cardiff*).—They are manufactured by Messrs. Kilner Brothers, Bottle Merchants, Thames Street, London.

Chinese Sugar Grass (*A. T.*).—It is totally worthless in England for any other purpose than as a green fodder for cattle. As to making sugar or wine from it, as you say Mr. Hullett states you can, it is a statement like those made by the same person relative to ripening Mangosteens, a Passiflora producing fruit of 14 lbs. weight, &c. The Sugar Grass has been tried even in the south of France and failed. The seed may be bought at 1*s*. 6*d*. per lb. of many wholesale seedsmen.

Rutherford's Day and Night Thermometers (*F. E. G.*).—Any mathematical instrument maker can supply them.

Iris Kæmpferi (*G. S.*)—We have never seen it in flower, nor do we know any one who has. There is a coloured drawing of it in "L'Illustration Horticole" for 1858. There is much that is pleasant in what you call "twaddle."

Clematis Around Trees (*Sunny*).—This plant does not injure trees so much as Ivy, but it does to some extent diminish their vigour. It certainly will not smother forest trees.

Pruning Roses (*Idem*).—Early in March is a good time to prune Roses, and if not now done pruning should be completed forthwith. From the middle of February to the middle of March, during mild weather, we consider the best time for pruning Roses. Mignonette sown in the circles will not injure them to any great extent, the trees being well watered in dry weather.

Passion-Flower for Open Air (*Idem*).—There is but one Passion-Flower that will do in our climate, and then it must have a wall with a southern aspect, and protection in winter. It is Passiflora cærules.

Irish Yews Open (*Idem*).—You may tie the branches more closely together, and in that way secure a more compact appearance. You must not prune them, beyond removing irregular growths. Try tying and removing the shoots, but do not draw them too closely together.

Camellias in Bed of Conservatory (*Subscriber, B.*).—The border is not, perhaps, properly made. We would have the plants taken up now, remove all the soil, and at the bottom of the bed place 9 inches of rough stones or brickbats, and then 3 inches of smaller stones or gravel. There should be an outlet for superfluous water at the bottom of the bed beneath the drainage. You may make the drainage any depth, only allow 18 inches above it for soil for the Camellias. If the bed be narrow and the plants trained to a trellis, the bed may be from 2 feet to 2 feet 6 inches deep. We would place a layer of sods, grass side downwards, over the gravel or drainage, and fill the bed with turves cut from a pasture where the soil is a good hazel or yellow loam, and if rather sandy all the better. The turf should be from 1 to 1½ inch thick, and chopped with a spade roughly for the bottom, and rather finely for the top. Raise the bed rather high, tread it firm, then plant the Camellias, covering the surface with an inch of fine soil. Give a good watering after planting, maintain a moist atmosphere, and give frequent syringings overhead. We think your plants will then thrive.

Grapes Shanking (*A Cottage Gardener Reader*).—We should attribute the shanking to the lowness and consequent wetness of the border, coupled with its being badly drained. We are led to this conclusion from the wood ripening so badly. The aspect also is not good.

Shrubland Pet and Prince of Orange Pelargoniums for Bedding (*Inquirer*).—These may be used where Tom Thumb will grow, but they are not effective bedding plants. The Alternantheras lately recommended for bedding purposes, will, so far as we have had experience of them, do fairly in a cold climate during the summer months.

Vines with Terminal Shoots Killed (*W. C. D.*).—As your Vines are ripening their wood we would recommend you to encourage this process as much as you can, and about the time they naturally commence vegetation out of doors you can cut them down, and during the summer you will obtain a growth of wood which may produce a few bunches in 1868. We do not know how the stock of bedding plants is in the country, but you could not do better than advertise.

Snow Plough.—"*G. Bond*" will be obliged by a drawing and a description of a good snow plough. He has one but it requires to be loaded with stones and there must be a team of horse to drag it.

Making Peat Charcoal.—"*T. M.*" asks information respecting making peat charcoal. The peat should be dry, enclosed in an iron vessel with a tube for the escape of moisture, from which pyroligneous acid may be made when peat is charred on a large scale, the iron vessel made air-tight, and placed in an oven with fire round it. I had large works near the Solway in my charge for making peat charcoal for manuring purposes, and about one hundred acres of peat ground for that purpose.—H. O.

Cotton-growing (*J. W. L.*).—We inserted the best possible answer to your inquiry—namely, Major Trevor Clarke's directions for its cultivation. See page 127, of present Volume.

Old Vines Breaking Wearly (*Live and Learn*).—1, With the vigorous state of the old Vines, lime rubbish and a little well-aired loam would have been your best dressing. 2, The Vines being exposed to the open air so long, the roots would most likely have a tendency to go down. 3, The wood formed in such circumstances will require more ripening in the autumn, than wood on Vines with the roots nearer the surface. 4, The fact of the Vines bearing well-coloured fruit last season, is a proof, so far, that there is nothing very much wrong with the Vines. 5, We attribute the failure, the Vines breaking so weakly, and showing tendril-like fruit, chiefly to your hurry in commencing to force in February, and feeling impatient that they did not break freely in a month. You had better have given them six or seven weeks, more especially if, so far as we can make out, the bulk of the roots are in the outside sodden border. 6, As three-parts of the plump-looking buds have not yet broken, and as there is no chance of those which have broken doing any good, we would pull or tear off all the shoots that have come—do not cut or use a knife—lower the temperature of the house to from 50° to 55°, and increase it gradually to 60° in the course of a fortnight, keeping the atmosphere moist, and if your wood was well ripened last autumn (which we rather doubt), you will obtain a crop. 7, The covering of furze on the border, if you had nothing better, we would have let alone.

Sulphur in Coals (*Bob*).—If your watch did really stop from the sulphur fumes coming from a furnace when cleaning it out, it is the first case that has come to our knowledge. That the outside of your watch if silver should become black and tawny in colour we should not have been at all surprised. When we used to have sulphury coals to deal with, we have had the shillings and half-crowns which we carried in our pockets, refused at the shops, and once or twice were threatened with the consequences of attempting to pass bad money. In one place we used very sulphury coals for most of the houses without doing them much injury, but in a stove where a high temperature was required, coals free from sulphur had to be brought from a distance, for if the sulphurous coals were used there would be yellow marks all over the glass in the morning. The houses were all heated by flues, and though no smoke escaped the sulphur fumes would do so when the flues were more than usually hot. There can be no question that all such sulphur fumes are dangerous to animal life. We have frequently had to run out of a stoke-hole, to save ourselves from suffocation, when removing clinkers and cleaning out. We knew of no remedy except tying a cravat or handkerchief over mouth and nose when performing the operation, pulling it down as we went from furnace to furnace, and putting it over both nose and mouth before opening the doors of a fresh furnace. We have not a doubt, that simply by neglecting such a precaution, and carelessly going without preparation from a very hot to a very cold atmosphere many gardeners, humanly speaking, have shortened their days.

Flower-garden Planting (*D. W.*).—With the exception of the Hollies in the centre of the large bed, and Roses for the first ring, followed by Perilla, Calceolaria, &c., we like your planting. The centre of your large bed will be tame in autumn, when all the rest are at their best. The position of your chain beds will greatly modify their planting The cross system is adopted, as No. 1 and No. 13 to pair, but if the two chains are one on each side of an open space, we would prefer 1 and 12 to correspond, 2, 3—16, 17, &c., but this is a matter of taste. We think the planting will look very well.

Vinery (*W. B. H.*).—Provided you mean to take in the space of 16 feet in width, then from the top of your 7 feet 9 inches wall you could have a hipped-roof of 6 feet resting on a ridge about 12 feet from the floor, and which ridge would be about 5 feet from the back wall. If your front wall of brick and glass were 6 feet high, you would thus have a sloping roof of about 12 feet. If your house were narrower and designed chiefly for plants, the simplest mode would be to have your south front, of glas chiefly, the same height as the back wall, and then a span roof. Those who advertise in our columns would give estimates, but the expense will depend on the finishing, and whether the sashes of the roof are moveable or fixed.

Completion of a Greenhouse (*A Subscriber*).—We should not consider that your greenhouse was finished in either the best or a workmanlike manner, if the panes of glass were merely placed on the rebates of the sash-bars, and a tack put in above them on each side, without putty either for bedding or above them. There are modes of dispensing with putty, such as Beard's and others, having the squares to go in a well-fitting groove on each side, or when the glass is fitted in the usual way, but with something softer than wood to rest on, and indian-rubber or some similar material between the tack and the glass. We can hardly say without knowing more of these particulars how the matter would be decided. We would on a common-sense view consider that glazing was understood, putty included, in finishing in the best manner. We have little hesitation in saying, that if the tacks fixing the squares press at once on the glass, you run the risk of having the glass broken and falling out from the want of proper finishing.

Hays's Stove (*Economy*).—We think one of the 60s. stoves would exclude frost from a greenhouse 12 feet by 10. It is more economical and less troublesome than a stove consuming either coal or coke.

Langelier's Nursery, Jersey.—We were in error when we stated there is now no such firm in the island of Jersey. The direction is, Mrs. Langelier, Offices of the Agricultural and Horticultural Society of Jersey, 19, Bath Street, St. Helier's, Jersey.

Heating from a Kitchen Boiler (*J. M. O.*).—To convey hot water from the kitchen boiler up-stairs to heat a small greenhouse, we should prefer the flow-pipe going from the top of the boiler, but it will do very well if taken from the side, but the nearer the top the better. Of course, you are aware that the return-pipe should enter the boiler near its bottom.

Liquid Manure of Fowls' Dung (*O. D.*).—At the rate 1 oz. of dry fowls' dung to a gallon of water a very excellent liquid manure is formed for plants in pots. A Vine does not require it. The book you refer to is "Manures." You can have it free by post from our office if you enclose four postage stamps with your address.

Vine Shoots (*T. C.*).—When two shoots proceed from one eye wait until you see which is fruitful, and then remove that which is unfruitful. If both are fruitful remove the weakest.

Aucuba (*B. B.*).—It is a female plant. You will see by Mr. Standish's advertisement in our Journal last week, that you can have male flowers from him by post.

Making a Bowling-green (*J. G.*).—The dimensions must vary according to circumstances but where there is scope of ground sufficient, bowling-greens should not be less than from half an acre to an acre. The most common form is that of a square moderately extended; but some are made oblong, others circular, though, to suit the general plan or figure of the ground, they may be of any other form. The surface of the greens should be perfectly level, "not rising at all in the centre," and as high, at least, as the general level of the adjoining ground, so that it may be always preserved from stagnant moisture The surface should be levelled in the most exact manner, and laid with the finest grass turf that can be procured from a close pasture, common, or down. The extent and proper levels are then set out with stakes placed round the extremities or boundaries, at 15 or 20 feet distance, on which should be marked the determinate levels of the ground, and from which, on the opposite sides, levels in other crossways at the same distance should be made; and then, according to these levels, proceed by line and spade to form the ground to a proper surface, making it up firmly in lines from stake to stake; the panels or spaces between being made up equally firm and regular, so that no part may sink in a hollow afterwards. The whole should then be raked level, and finished off evenly and smooth 2 or 3 inches deep of light sandy soil, or any light dry poor earth may then, if necessary, be laid evenly over the surface, as equal in quantity as possible. Laying with fresh cut turf, is much superior to sowing with Grass seeds. The turves should be cut each a foot wide, a yard long, and about an inch thick, and laid with exactness, closely joining them edge to edge, then beating them well down with large wooden beaters, repeatedly rolling them with a large heavy iron roller. The best season for performing work of this sort is the autumn, or very early in the spring; but the first is to be preferred when it can be conveniently done, as the turf has time to establish itself well before the hot season sets in. —(*Rees's Cycl*).

Pomme Paradis Stock (*A Subscriber*).—You will find the subject fully discussed in our tenth Volume.

Rainfall (*W. Biggs and Others*).—We have received many meteorological returns for which we cannot afford space at present.

Clerodendron Balfourii Culture (*B. P.*).—Pot in a compost of turfy peat, loam, and leaf mould in equal parts, adding one-fourth silver sand. Sift the leaf mould, but merely chop the peat and loam with a spade. The pot should be well drained. Give a shift into a pot a size larger; and when the plant has grown and made six leaves take out the points of the shoots; or if the plant has not been stopped, cut it back to four joints previous to potting, and when the young shoots are an inch long pot the plant. When the pot is full of roots shift into a pot a size larger, or from a seven-inch into a nine-inch pot, and this will be sufficient for the first season. In spring repot into the same size of pot as that in which the plants were wintered, and when it begins to push afresh cut it back to two or three eyes. When the pot is full of roots shift into one 11 or 13 inches in diameter; and do not stop the shoots, as the plant will most likely flower, but tie them out. Afford a plentiful supply of water, but before any is given let its want be apparent, and maintain a moist, moderately well-ventilated atmosphere, and place the plant near the glass in an unshaded part of the house. When the growth is completed keep the plant dry at the root, and let the atmosphere be dry as well, in order that the wood may become well ripened; but the leaves should not be allowed to flag, nor the shoots to shrivel for want of water. It requires the temperature of a stove.

Watering Inside Vine Border (*A Youngster*).—You should give the border a good watering now and every fortnight until the end of July; then water once a month will be sufficient, the last watering being given in September. You will not require liquid manure this season. A little fire heat now when the Vines are breaking until danger from frosts and cold weather is past, and again in autumn to ripen the wood, will be beneficial and necessary.

Cutting Box—Pruning Evergreens (*Box*).—The best time to cut large overgrown Box-edging is the middle of April, and for Box in good order the end of June is preferable. Evergreens of all kinds are best cut in spring a little before they begin to grow, when they may be cut in close with every prospect of securing a good growth. If the shrubs are required to have a close symmetrical head they should be gone over in August, and any irregular growths removed.

Gardenia fragrans not Flowering (*A Young Gardener*).—We presume your plant casts its buds in consequence of not having sufficiency of heat. If you were to plunge the pots in a mild hotbed it would probably flower freely. Pot it after flowering in a compost of turfy sandy peat and loam, adding sand liberally, and place it in a moist growing heat, such as that of a vinery at work, and when the growths are made afford a light airy situation. When growing water liberally, and in winter keep moderately dry in a temperature of from 50° to 55° from fire heat. In February or March afford an increase of temperature, plunging the pot in a hotbed if you have one; if not, keep it well watered and in a moist atmosphere.

Philadelphus mexicanus not Flowering (*Idem*).—Your plants of this we suppose to be in the open ground, and to have a light open situation unshaded by trees, and plenty of room. If so they will bloom when large enough; but you may hasten their flowering by digging out a trench all around at about 1 foot or 1 foot 6 inches from the stems and below the roots, cutting off any of these that may go down immediately under the stem.

Verbenas Flowering in Pots (*Tweedside*).—The best way to flower Verbenas in pots is to place them into their blooming pots in May, and to peg down the shoots as they grow, bringing them to the rim of the pot. You may stop them to make them bushy up to within six or eight weeks of the time at which you wish them to bloom, tying the shoots neatly to supports. Water freely and overhead daily, using the lights only as protection from heavy rains. When the plants show for bloom liquid manure may be given at every alternate watering. A compost of turfy loam and leaf mould in equal parts suits them well. The pots should be well drained.

Tricyrtis hirta (*Idem*).—This is a hardy herbaceous Japanese plant, but is not hardy in exposed bleak places. It has fine open corymbs of starry flowers, of large size, and spotted with purple. It is as yet scarce.

Charcoal Fire in Fernery (*Pteris*).—The carbonic acid would injure the Ferns and would not kill the insects. You do not state the kind of insects.

Garden with North Aspect (*E. Watts*).—We presume by trees you mean shrubs, and of these Box, green and variegated Hollies, Portugal and common Laurels, common and Irish Yew, Aucuba, and any of the commoner shrubs would thrive. Of flowers you must grow such bulbs and plants as Snowdrops, Crocus, Hepaticas, Primroses, and Polyanthus for early bloom, and in summer depend on Sweet Williams, the common sorts of Roses, Pinks, Pansies, and such old-fashioned perennials. If the place is much shaded by high buildings your best plan will be to have shrubs and grass.

Camellias, Azaleas, and Rhododendrons not Flowering (*A Gardener not in fault*).—You will do well to pot the Camellias and Azaleas now if they require it, placing them afterwards in a vinery at work, as you propose, and keeping them there until the growth is made, when a lighter and more airy structure will be more suitable for them. After the growth is made they cannot have too light and airy a situation. The Rhododendrons, greenhouse kinds we presume, ought not to be placed in heat, but have a light situation in a cool house, with plenty of moisture when making their growth, and copious supplies of water at the root.

Preventing Attacks of Insects (*Rebecca Lane*).—The remedy you name, and now going the round of the papers, is in a great measure obnoxious to insects, especially caterpillars. It will not destroy their eggs, and does no more than cause caterpillars to fall from the trees when the solution is syringed over them. Our experience of it is but limited, but so far as we have tried it, it does not meet our expectations. The best vinegar should be used, diluted with nine times its volume of rain water.

Eriostemon Smithii Culture (*Wexford*).—Shift the plant at once into a nine-inch pot, taking away all the old drainage and loose soil, and if the ball be very firm loosen the sides a little. Drain well, using a compost of turfy sandy peat two-thirds, and one-third turfy sandy loam, with one-sixth of silver sand added. Pot with the collar rather high. Afford a light and airy situation in a cool house, from which frost is merely excluded. Tie down the shoots, and stop any irregular growths to secure a compact plant. Water carefully after potting, but copiously, when the roots are working in the fresh soil. In June, if the plant has grown well, shift it into an 11-inch pot, and place it in a cold pit or cool airy house, stopping and tying out the shoots until the end of June or middle of July. Afford plenty of air, and keep the plant near the glass. In winter keep it near the glass and give abundance of air, with protection from frost, being careful not to overwater, and avoiding a damp, close atmosphere.

Elæocarpus reticulatus (*Idem*).—Its treatment is the same as that of Eriostemons, only it is a taller-growing plant, and does not bloom until it has attained a considerable size. We have bloomed it when 5 feet high, and in its third year.

Large Camellias (*D. C.*).—The best vessel that we have tried for large Camellias are tubs made of oak, which last sufficiently long; but if pots large enough can be had nothing is better. The same remarks apply to Orange trees. We have not tried slate tubs, and do not think them desirable.

Salt for Asparagus-beds (*S*).—The quantity of salt you name is excessive to be put on the beds at once. We advise the salt to be applied at twice—that is, when the beds are dressed in spring give them a dressing of 1½ lb. of salt per square yard, or 24 lbs. for your bed, 30 feet by 5 feet, and you may repeat the application at the end of the cutting, or about the middle of June; 1 lb. per yard will be ample. The weeds will easily be kept under.

Sifting Soil for Pelargoniums (*A Subscriber*).—The soil used for potting Pelargoniums should not be sifted but chopped and made somewhat fine with a spade, and in potting the soil should be made somewhat firm. No riddling is required, as the plants grow much better when the soil is used rather rough, and then it is not so apt to become sodden and sour. A little fine soil may be used for surfacing the pots.

Grafting Sycamore (*G. E. Briscoe*).—We have no experience of grafting the Sycamore with the Platanus occidentalis, nor do we perceive what would be gained by doing so, even if it were successful, as neither it nor Platanus orientalis is sufficiently hardy to bear our climate in exposed situations.

Annuals for Late Blooming (*M. C. T.*).—Centranthus macrosiphon, Alyssum maritimum, Erysimum Peroffskianum, *Dianthus chinensis, Gilia achilleæfolia, Hibiscus africanus, Gypsophila elegans, Godetia rosea alba, Double Clarkia integripetela, C. pulcherrima, *Prince's Feather, *Love-lies-Bleeding, White Rocket and Crimson Candytuft, Centaurea cyanus minor, Bartonia aurea, *Calliopsis cardaminifolia, *C. atrosanguinea, *C. Burridgi, Campanula pentagonia, Convolvulus minor, *Saponaria calabrica and its white variety, Eschscholtzia crocea, and E. tenuifolia, Godetia Lindleyana, Obeliscaria pulcherrima, *Œnothera Lamarckiana, *Nasturtium Tom Thumb scarlet, *crimson, *spotted, and *yellow varieties; Virginian Stock, *Tagetes signata pumila, and *Senecio elegans in variety. Those marked with an asterisk (*) should be sown in April, and the others not until the end of May or early in June. Mignonette should not be omitted. We know of no flowers that are to be depended on for blooming from October to December except Chrysanthemums.

Hardy Perennials (*Ignorama*).—We regret having mislaid your letter. We are making inquiry, and will answer your questions fully shortly.

Ferns Losing their Fronds (*Maiden Hair*).—We consider a house moist enough for the growth of Ferns when there are evaporation-troughs and the walls and every available surface are sprinkled with water twice daily. We do not consider syringing overhead essential or necessary, but, on the contrary, it is destructive to the beauty of many kinds, and also to the young fronds. If you were to sprinkle the walls, paths, &c., with water twice daily, and not syringe the plants overhead, but afford enough water at the root, and yet not so much as to saturate the soil, giving also a fair but not an excessive amount of air, and slight shade from bright sun, we have no doubt that the plants would thrive. We fear you keep them in too high a temperature during the winter, at which season they require a period of rest. A temperature of from 50° to 55° is sufficient for the stove kinds, and one of from 45° to 50° for the greenhouse sorts, increasing the temperature in spring, when, after a season of rest of not less than three months, they will start into growth with increased vigour. Remove the pots from the pans of water at once, and place in the coolest and most shady part of the house. If they require potting now is the best time to perform that operation.

Vine Leaves Browned (*C. S.*).—We never saw more healthy Vine leaves—the bronzed and brown stains on the leaves were caused by bright sunshine, the rays concentrated by lenses formed by dew drops, perhaps. The rust on the berries might be caused by sudden transitions of heat. The very small berries indicate that the bunches ought to have been thinned long since. Freer ventilation, with canvas over the opening to prevent violent currents, is probably desirable.

Error.—At page 193, column 2, line 4 from the top, for "sundried" read "sandy."

Plant Case (*In-door Gardener*).—Some plants can be perfectly well grown in small cases. We have one with Ferns and Cyperuses, and the surface of the soil covered with Selaginella denticulata. Small plants of Azalea indica and Hyacinths remain as long in bloom in such a case as they will in a greenhouse. We have had them all the winter in a sitting-room fire-heated.

Names of Plants (*Mr. Gough*).—Your Orchid was so completely crushed that we could not recognise it. Send a flower or two in a box. (*Nellie*).—Adiantum diaphanum; 2, A. cuneatum: 3, insufficient. (*James Brown*.—Nematanthus longipes. *J. E. W.*.—Hardenbergia Comptoniana. (*W. Hullett*).—Edwardsia grandiflora. (*Vaga*).—Cyanotis vittata, commonly called Tradescantia zebrina; Picea pectinata. (*F. E. W.*).—We cannot tell the name of your plant from the leaves.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending March 19th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 13	29.891	29.633	34	30	40	41	E.	.40	Frosty; cold and overcast; snow at night.
Thurs. 14	29.622	29.512	41	28	40	40	E.	.00	Snow and sleet; overcast; snow in broad flakes; overcast.
Fri. .. 15	29.778	29.692	40	25	40	40	N.E.	.11	Snowing; uniformly overcast; fine at night.
Sat. .. 16	29.985	29.875	38	20	40	40	N.E.	.00	Clear and frosty; fine with white clouds; frosty at night.
Sun... 17	29.995	29.678	38	30	39	39	E.	.00	Frosty with slight haze; cloudy and fine; boisterous.
Mon... 18	29.496	29.445	35	30	40	39	E.	.06	Very cold and boisterous; snowing; densely overcast.
Tues. . 19	29.370	29.272	36	32	39	39	N.E.	.25	Overcast; heavy fall of snow and sleet; drizzling rain at night.
Mean	29.734	29.587	37.43	27.85	39.71	39.71	..	0.82	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

COMBS AND HOCKS OF DARK BRAHMA POOTRAS.

Excellent articles have been written by "Nemo" and others, explaining the writers' ideas as to what Dark Brahmas should be, and, to a certain extent, what they should not be; but the subject is far from exhausted. It is useless, I fear, looking out for a bird perfect in every respect; two points, however, on which Brahma-fanciers are not agreed—combs and hocks, I wish to say a few words about. Take two cocks, perfect in every way, except that one has a faulty comb and the other vulture hocks, both objectionable, but neither disqualifying for exhibition—I would prefer the bird with the vulture hocks, though I would not condemn altogether a comb slightly twisted and not quite evenly serrated. I would, however, insist on its being triple, not too high, and firmly fixed on the head. At the same time I admire a perfect pea-comb as much as, if not more than, any other point in a pure Brahma, and I consider it a point too much neglected by Brahma-breeders. As to vulture hocks, however, there cannot, in my opinion, be a doubt that they are too much cried down. I would infinitely prefer breeding from a cock with such hocks and heavily-feathered legs to breeding from a nearly bare-legged bird, though he had the most faultless comb a Brahma was ever favoured with. Surely heavily-feathered legs are a great beauty, and yet one of the first professional judges in England told me that most judges look with great suspicion on legs heavily

feathered, and not vulture-hocked, as it was easy, he said, to destroy the objectionable feathers. Well; so be it. A Game cock is sent for exhibition undubbed. He is worthless. Dub him, and he is the most perfect bird the world ever saw. Show a Brahma cock with vulture hocks, but otherwise perfect. He is perhaps commended. Remove the faulty feathers, and, without a dissentient voice, he wins the silver cup. In the Game case all is fair and honest. In that of the Brahma the reverse. In the name of common sense, why? The initiated in the mysteries of poultry can tell, but the outer world lies in utter darkness. In any way if we allow heavy, high, shaky, podgy combs to be overlooked, and vulture hocks to be utterly condemned, however splendidly feathered the leg may be, the result will be a very inferior-looking race of Brahmas.—Falcon.

PIN IN A FOWL'S BREAST.

A few weeks ago I purchased a pen of Black Spanish fowls, and a day or two afterwards a neighbour, who has had much experience in breeding poultry, called in to see my newly-acquired stock. "Well," he said, "the hens are very good, but as for the cock," and then my friend shrugged his shoulders, and performed sundry other pantomimic movements, which were eloquently condemnatory of the bird. "Yes," said I appealingly, "but he has not recovered from the moult yet, the gentleman to whom he belonged assured me that he was a splendid bird, and that he would soon be all right." To this my friend quickly replied, "He will never be right again, look at his comb (it was pale and shrivelled), there is something amiss with him depend upon it." I could only point to the size of the bird, for he was very large, to his plump condition (his appetite was enormous), his fine plumage; but my friend was inexorable, and would look only at his comb. "Well," I said at last, "What shall I do with him?" "Boil him," was the quick rejoinder. Determined, however, to give the cock a fair chance to recover, I tried what careful nursing, and good living would do; but toast and ale, and all the other good things which poultry doctors prescribe, were of no avail; as the tombstones have it, "Physicians was in vain."

So the cock was killed, and in due time boiled. During the operation of dissection which followed, the carving knife grated against something which was evidently neither flesh nor bone, and on examination we found a large pin, coated with rust, embedded in the middle of the breast, and partly fixed in the bone. Here was the explanation of the pale and shrivelled comb. I have reason to believe that the poor bird had carried the pin in its breast for more than twelve months, but how it came there, whether it had entered the gullet and forced its way through the crop, or whether it had pierced through the external skin, I am quite unable to say.—Wm. Stonewall, *Whitby*.

THE USURPING BRAHMA.

"For usurped greatness vengeance is in store;
Short is the date of all ill-gotten power."—(*Lansdowne*.)

Fully do I coincide with "Old Dorking Cock," and your authority quoted in last week's Journal. The fowl for the farmyard ought to be a superior meat-producing bird, a superior egg-producer, and a good forager. Now, the Brahma Pootra is equal but not superior to many other varieties for supplying the egg-basket, but it is inferior almost to all others in the other two requisites. I am quite sure that Game, as well as Dorking fowls, are to be preferred for the farmyard. The flesh of the Game fowl is not so abundant as that of the Dorking, but its flavour is superior. In a quaint poem now before me, a dying Game cock dictates his will, and its very first item is,

"Imprimis—let this never be forgot—
My body I bequeath the kitchen pot,
Decently to be boiled. . . . . ."

I would have proceeded to descant more fully upon the fowl's merits had I not met with the following from the pen of Mr. C. N. Bement, an American authority:—

"If any one should desire the *ne plus ultra* of excellence in a fowl, let him eat and pronounce his opinion on the wing of a well-fed Game pullet, and we will venture to have no fear of his disagreeing with this expression of our judgment on the good qualities of these birds for the table; and Game hens as layers are as good as any, as many as twenty-four eggs being constantly laid by them before manifesting any desire to sit. But with regard to the number of eggs laid by fowls of any breed, previously to their manifesting a desire to incubate, much will depend on whether the eggs are removed and a porcelain egg allowed to remain, or whether to accumulate as day by day the store may receive additional deposits. If the latter plan be adopted, few Game hens, we imagine, would be found to lay beyond what instinct would suggest as the proper complement for their nest, and this we find from twelve to fifteen.

"As sitters, Game hens have no superiors. Quiet on their eggs, regular in the hours of coming off and returning to their charge, and confident from their fearless disposition, of repressing the incursions of any intruders, they rarely fail to bring off good broods. Hatching accomplished, their merits appear in a still more conspicuous light. Ever on their guard, not even a shadow of a bird overhead, or the approach of man or beast, but finds them ready to do battle for their offspring; and instances are on record where rats and other vermin have thus fallen before them. The greatest objection to the Game fowl is its pugnacious propensities."—Coq d'Angleterre.

INQUIRY.

In justice to Mr. M. Brooksbank, 4, Back Rolleston Street, Manchester, I beg to state that he purchased a pair of Spanish hens of me (Rodbard's strain), on the 7th of April, 1866, for which he sent me a post-office order with the order. The letters I received with reference to the same were perfectly straightforward, and in due course I heard from him approving of the hens.

It would be useless my repeating Mr. Wheeler's remarks, but let us "Speak of a man as we find him."—Thomas Ace, *Ystalyfera, near Swansea*.

[We readily insert this second testimonial, for we find that Mr. Brooksbank is quite trustworthy, and we hope that the insertion of the inquiry about Mr. Brooksbank, though it has annoyed him, will be of benefit to him. He has written to us on the subject, and explained that Rolleston Street, Manchester, is not the place where he keeps his poultry. They are at Blackley, four miles from Manchester. We need scarcely add that neither the gentleman who wrote to us nor ourselves had any object in view than the protection of purchasers of poultry, and that we regret that any doubt should have been suggested as to Mr. Brooksbank's respectability. We have had similarly favourable testimonials from Mr. Ellis, of Bracknell, Berks; and Mr. W. May, Lily Hill Farm, Bracknell, Berks.—Eds.]

NEW INCUBATOR.

I crave a few lines of your space to support my principle of scientific incubation by boiling water.

Mr. Brindley admits his incubator varies from 95° to 106°. I guarantee that one on the principle of boiling water shall not vary more than 3° in temperature, even though the external air may range from 30° to 65°. Mr. Brindley admits his incubator to require four minutes daily attention. A steam incubator requires the water supply renewed once a-week, but if the supply-cistern is large enough, it will require no attention at all. In warmer weather I shall have no difficulty, as my pipes go into the hot-air chamber through holes stuffed with padding, and can be withdrawn any distance, thus leaving less piping full of boiling water in the chamber.

Mr. Brindley in saying that the eggs are far removed from the heating source, is in error. In a boiler and pipes properly constructed there is constant circulation, and the temperature of the water in the pipes close to the eggs is the same as that in the boiler—*i. e.*, 212°.

Into the trade question of expense I cannot enter, but will merely say that a tubular boiler can be kept at boiling point by less gas than is required to keep a flat boiler like Mr. Brindley's, at a temperature of 120°.—A. H. S. W.

COMB OF BRAHMA POOTRAS.

I must say a word in reply to those who state that the pea-comb of the Brahma is variable, and I cannot do so better than by stating my own experience as regards this important point in about the best fowl we have ever had.

In 1852-3, I imported as many of the best Brahmas as came to about £150. Of those I parted with enough to return a portion of the outlay, reserving to myself the well-known Uncle Sam and his family of half a dozen hens, a very fine light cock,

with a company of hens, and several nice trios to cross with these, and by that means to avoid in-breeding for many years. Besides unions among these families, I crossed with none but imported birds, except in one instance, and the result has been that in fifteen years I have never had a faulty comb from my own stock.

In the one instance above named, I crossed two years ago, with a good stock in England. Since that I have had now and then, if not quite single, yet faulty combs, but in every case I have been able to trace them to that recent cross, before which I never had such a comb.

Another fact that I have noticed in the Brahmas, is that the pure-bred chickens do not attain an enormous size the first year, but that they are only well-grown healthy chickens the first year, growing and improving up to two or three years old. In many instances Brahmas have been crossed with Dorkings to give dark colour, and this early large growth.

I admire the peculiar pea-comb as much as "NEMO," and feel as anxious as he does to have it left intact. It rests in the hands of breeders. Let all fowls which are the result of the Dorking, or other crosses, for the attainment of size or other supposed advantages, be set aside, and the pure breed adhered to, and I believe variety in comb will no longer be complained of.—E. WATTS.

BREEDING IN SUPERS.

HAVING read "SUDBURY'S" paper in page 98, upon "Breeding in Supers," I shall be much obliged if he will kindly answer the following questions:—I always find drone-comb in supers, although I have used boards with different-sized slits. I should like (if not too much trouble to take for an entire stranger), if he would send me a very small piece of wood just with a *slit* made in it the exact size he uses, then I would show it to the joiner and have an adapting-board or two made?

Last summer I found in one super a large number of drones dead, and the combs all yellow and discoloured. I should be glad to have a cure for this?

Will "SUDBURY" kindly tell me the price of the hives he uses—"Pettitt's Collateral Hives?" I have one of "Nutt's hives," but there is only a round hole in the top, no slits as he describes.

In the case of straw hives, of which I have some, with a round hole in the top of each, what would "SUDBURY" recommend me to do to exclude the queen and drones from any super I might put on?—J. H. WALKER.

YOUNG BEES—SUCCESSFUL DRIVING.

SUNDAY, January 27th, being a fine warm day, I saw a great many young Italian bees come out upon the front board; they came out so numerously that the older bees had not time to dress them, and many in attempting to fly fell to the ground. I picked some off the ground, and examined them closely. I found some very dark coloured, darker than black bees, the old sort, as they are usually called. Perhaps some of the Journal writers will be kind enough to say whether it is unusual for young bees to come out so soon after such severe weather. The hive alluded to stands in a bee-house fronting nearly south, with communication behind at the north, and with little or no protection.

Last autumn I united two hives of driven bees, put them in a common hive about one-third full of empty combs, and fed them with syrup, chiefly made from lump sugar and water, three parts of the former to two of the latter. Thanks to "our Journal" for information respecting bottle-feeding at the top of the hive. I find no way equal to it, as robbers have no chance. I put two more hives of driven black bees into an eight-bar Woodbury hive with three frames full of honey, but no brood. These I did not feed, as I thought they had a sufficient store to last them till spring. I weighed these two stocks of driven bees on November 14th, and weighed the straw hive above alluded to last Saturday, and found it 29 lbs. On November 14th last year it was 30½ lbs., there being only two days short of eleven weeks in the intervening period, yet but 1½ lb. of food consumed. I weighed them again to-day, Monday, January 28th, and they were just 29 lbs. The Woodbury eight-bar hive weighed, November 14th, 28 lbs.; to-day just 26 lbs.—that is, 2 lbs. of food consumed in nearly eleven weeks. Considering the mild weather before Christmas and the season generally, I consider this very trifling.

I should be glad if some experienced bee-keepers would jot down a few notes respecting the wintering of bees, as it may afford information to others as well as to—A. B., *Cheshire*.

[It is not very unusual to find young bees taking wing from strong stocks immediately upon the breaking up of a long frost. Your Italian bees must certainly be hybrids, if any of the young ones are darker than "the old sort."]

BEE GLOVES.

IN my first attempt at bee manipulation with frame hives I put on a pair of kid leather gloves, but very soon found that I could handle the frames much better without them. I therefore pulled off my gloves during my first operation, and have never used them since. I have never experienced so much as one sting on either of my hands, and as to indian-rubber gloves for apiarian purposes, I contend that it is much better to use no gloves. The apiarian can handle the frames much better without them, and if the frames are lifted carefully from the hive there is no danger of being stung. The great secret is to work quietly without any sudden jerk, and I have found that this can be much better done with the bare hands than with gloves of any kind.—SUDBURY.

OUR LETTER BOX.

POULTRY DISORDERED (*H.*).—The cold weather and want of change of food are the probable cause of your fowls moping and dying. Give them soft food once daily, such as barleymeal, bread soaked in ale two or three times a-week, plenty of green food, and under shelter a heap of sand and ashes to husk in.

SPANISH COCK'S COMB BLACK (*Winterlayer*).—It has been frost-bitten. Rub it with camphor ointment, keep the bird in a sheltered run, and feed him liberally.

GROUND OATS (*A. H. D.*).—They are not the same as oatmeal. They are ground, but all the bran left mixed with the flour. They can be obtained from Mr. Agate, Slaugham Mills, near Crawley, Sussex.

LIME FOR FOWLS (*S.*).—Do not mix slaked lime with the food of your fowls, it is corrosive; nor would we mix chalk or any other calcareous matter with their food. Let them have a good supply of bricklayers' rubbish to go to voluntarily.

USEFUL POULTRY (*A Young Hand*).—Brahma Pootra pullets and a coloured Dorking cock would answer your purposes.

PHEASANTS IN AN AVIARY (*Trotters*).—We are strongly in favour of three hens to a cock. We believe four may be put, but we do not agree with those who put five or six. Of course there are more eggs from five than from three hens; but there is not the same proportion of poults to eggs as when a cock has but three hens, or at most four hens with him. One cock and four hens. They will not do well with Partridges.

FRENCH VARIETIES OF POULTRY (*J. R.*).—The La Flèche lay the largest eggs, and we think the greatest number; but they are hard run by the Houdans, which lay very freely. They do not sit. All three are good table fowls, the greatest objection to them being their black legs. The La Flèche is most esteemed in France. Very large experience in all these breeds for some years causes us to place Houdans first, on account of their health and good constitutions. They never ail anything, and they are good in all particulars. We put the La Flèche next; they lay eggs that are unrivalled by any other fowl. While we speak thus we consider them all valuable introductions.

BRAHMA POOTRA EGGS NOT HATCHING (*A. J.*).—The eggs with chickens "glued in" were too dry. They should be wetted every day for a week before the chickens come out. When the hen is off her nest dip your hand in a basin of water and wring your fingers over the eggs till they are wetted. Failing this treatment the inner membrane becomes as tough and dark as indian-rubber, and the poor little chick cannot work his way out.

CANARIES AMONG RHODODENDRONS (*W. S.*).—Leaves of the rhododendron are not poisonous; but at the same time they might possibly have affected the young birds, they being delicate; but we are inclined to fancy that your birds died through being withdrawn from their soft food, and the old birds not allowing them to feed. A dead fir tree is the best to place in a room for breeding, with breeding baskets or boxes hung about it.

PETTITT'S HIVE (*Young Soldier*).—Mr. Pettitt advertises in our columns. If you write to him at Dover he will readily send you all particulars.

FOUL BROOD.—In the second line of the reply to "B. B.," page 203, for *stocks* read "stock."

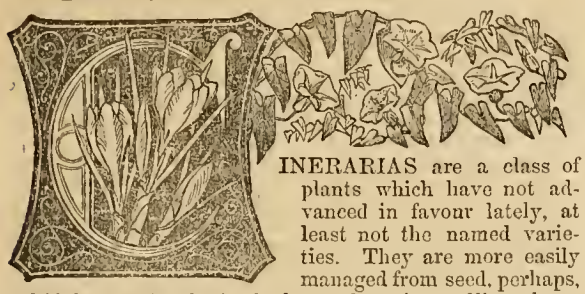
EMPLOYING EMPTY COMBS—WOODBURY UNICOMB HIVE (*A. B.*).—I should not, if it were my own case, be afraid to use combs which I had collected from apparently healthy sources, although I should, of course, destroy every comb from the infected stock, and having purified the hive to the utmost of my power, should let it lie by for a couple of seasons. My unicomb hive is 23 inches high, by 26½ inches wide inside, and accommodates six combs on bars (not frames). The outer ends of these rest in notches cut in the sides of the hive, the other ends in the centre on projections from a half-inch mahogany upright, the lower end of which is carried by a transverse bar of the same material and diameter. The space between the glass surfaces is an inch and two-thirds, as recommended by Dr. Bevan, whose hive it resembles in its general features. It has, however, the quadruple glass, with air-spaces between each surface, first introduced into observatory hives by Mr. Tegetmeier, and the shutters are not opaque, but are veritable "sun-blinds," or "outside venetians," which admit light freely, whilst they exclude the direct rays of the sun.—A DEVONSHIRE BEE-KEEPER.

WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 28—APRIL 3, 1867.	Average Temperature near London.			Rain in last 40 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
28	Th	Meeting of Zoological Society, 8.30 P.M.	53.0	34.1	43.5	16	47 af 5	23 af 6	38 af 1	34 af 10	(	5 16	87
29	F	[Promenade, 3 P.M.	53.6	33.4	43.5	13	45 5	25 6	22 2	28 11	23	4 57	88
30	S	Royal Horticultural Society Lecture and	53.6	34.4	44.0	17	43 5	27 6	1 3	after.	24	4 39	89
31	Sun	4TH OR MIDLENT SUNDAY.	54.9	34.4	45.2	18	41 5	28 6	35 3	30 1	25	4 21	90
1	M	Meeting of Entomological Society, 7 P.M.	54.9	34.3	44.6	21	38 5	30 6	6 4	35 2	26	4 2	91
2	Tu	Rl. Hort. Soc., Fruit, Floral, and General	55.5	36.0	45.7	20	36 5	32 6	35 4	44 3	27	3 44	92
3	W	Meeting of Soc. of Arts, 8 P.M. [Meeting.	57.0	35.9	46.4	20	34 5	33 6	2 5	57 4	28	3 26	93

From observations taken near London during the last forty years, the average day temperature of the week is 54.6°; and its night temperature 34.6°. The greatest heat was 78°, on the 3rd, 1848; and the lowest cold 16°, on the 1st, 1838. The greatest fall of rain was 1.19 inch.

THE CULTURE OF THE CINERARIA.



CINERARIAS are a class of plants which have not advanced in favour lately, at least not the named varieties. They are more easily managed from seed, perhaps, and if that can be obtained of a good strain, seedling plants make a good display. For those who are not particular about having all their plants with perfect-shaped flowers, such are the best; but if perfect-shaped flowers are required, and these of certain colours, the named varieties must be cultivated; and what brilliant colours are to be found amongst them! intense blue, deep purple, and glowing crimson. From the length of time, also, during which it continues in flower the Cineraria is one of the most useful of spring-flowering, softwooded, greenhouse plants, and it is certainly deserving of more care than is sometimes bestowed on it, especially when it is considered that the plant may be had in flower from Christmas until May.

Cinerarias are easily cultivated. The best way to propagate the named varieties is by offshoots from the root, and for early bloom this may be done as soon as they can be obtained after the old plants are cut down, and in July and August for late flowering. I pot them singly in 60-sized pots, using a compost of half peat and half turfy loam, chopped fine, liberally mixed with silver sand; part of the compost is sifted in order to obtain some fine mould to place on the surface, using the rougher part at the bottom. Until lately I used leaf mould instead of peat, but I cannot obtain it here so readily as the latter, and I find the offsets do equally well in it. They are then placed in a frame where they have the advantage of a little bottom heat—a Cucumber-frame is as good a place as any—and two rows may be ranged along the front of the frame, which will shade them from the sun. The old plants are kept in a shady corner out of doors, as some of the cuttings may fail, but as soon as a sufficient number of young plants are rooted they are thrown away, and the pots washed and laid aside for future use.

The plants will not all strike root about the same time, but those which show signs of growing are removed to a cold frame until all are ready, and as soon as they are hardened off they are shifted into larger-sized pots, using the same compost, but a less quantity of sand, and adding some rotten cow-manure. The frame in which the plants are now placed has its highest side towards the south, as the Cineraria is very impatient of the direct rays of the sun, and a circulation of air is obtained underneath by the frame being raised on a brick placed at each corner. The plants are kept as near the glass as possible by being elevated on pots; or, which is better, a temporary stage is made with 4½-inch planks cut the length of the frame, inside measure, and placed on pots, using larger pots at the back, so that all the plants may be about 3 inches from the glass when the lights are on and the frame shut. A stage erected in this way has a neat appearance, and the pots may be made to stand level, which is of great importance; for if they do not stand level they cannot be watered properly. The plants must not at any time be allowed to flag, for if they do hosts of insects will make their appearance. They are at all times liable to the attacks of green fly and thrips, both of which ought to be destroyed by fumigating with tobacco, as the leaves are disfigured and permanently injured by being washed with some of the mixtures used for destroying these insects.

If the plants are carefully watered and kept free from insects by fumigating they will grow rapidly, and as soon as they have filled the pots with roots, and before they become pot-bound, they should be shifted into seven-inch pots, using the compost already named, or one of two parts turfy loam, one part leaf mould, some rotten cow-manure, and sand if the loam is not of a sandy nature. The plants intended for early flowering are allowed to flower in these pots, and in general are not pinched back.

The most forward will come in at Christmas, but those which are intended to flower until the Pelargoniums take their place are treated differently; they are pinched back, and shifted into nine-inch pots, and the best place to grow them in is a span-roofed pit running north and south. Here they ought to be arranged as near the glass as possible, and so that the foliage of any two plants may not touch. Care must also be exercised in watering, especially in dull weather; none of the foliage should be wetted, and watering should be performed in the morning, so that the damp may be dried up before the house is closed at night. All mildewed and decayed leaves must be removed as soon as they are observed.

The plants will soon throw up a number of flower-shoots, and to make fine specimens the shoots must be tied out. The best way of doing this is to fasten a wire round the rim of the pot, and draw the shoots towards it with a strip of matting; this must, however, be done carefully, as the stems are very apt to break if bent too much; rather than bend them too much at first it is better to go over them a second time in a week or ten days, and bring them down so that they may ultimately touch the rim of the pot. Enough shoots must be left to fill up the centre of the plant, and these must be trained regularly by stakes thrust in the soil and placed at convenient distances.

After the roots have nearly filled the pots in which the plants are intended to flower (a nine-inch pot is large enough for the finest specimen), they ought to be supplied with liquid manure twice a-week. That which I have found best is made from sheep's-droppings picked up in the field and used fresh, half a bushel being put into a tub along with fifteen gallons of water. After stirring the whole well together, and allowing it to stand for twenty-four hours, the liquid is ready for use; but before applying it an equal quantity of clear water should be added.

Where sheep-droppings are not to be obtained, cow-manure is the next best, but it is not so strong, and a larger proportion may be allowed to the same quantity of water. I have also used guano water; it is more easily managed than the other kinds of liquid manure, as all that is required is to add a pinch to the water before applying it. Guano must be employed with caution, as it varies very much in quality; it is not safe to use more than 1 oz. to a gallon of water, but experience will be the best guide. I remember a case in which some Cinerarias were being grown for exhibition, and all at once they ceased to do well; on sunny days they would droop, and look as if they required water, and the flowers did not open well. Various were the conjectures respecting the cause, and much anxiety was felt, until one of the plants was turned out of the pot, when the greater part of the roots were found to be dead. These plants had been treated in this way: A barrow-load of sheep-droppings was thrown into a tank, a quantity of water added by guess, and the plants watered with the liquid.

The Cinerarias which flower late in the season will have to be shaded as soon as they come into bloom, in order that their beauty may last as long as possible. Any light material will answer for this purpose, the lighter the better; if it break the force of the direct rays of the sun that will be enough, and it ought not to be kept on longer than is necessary; it should not be used to exclude light from the plants. I mention this particularly because I have seen shading put on when the sun's rays were injurious, and kept on night and day to the evident injury of the plants. Dulling the glass with whitening I also think objectionable for the same reason—that it must remain on in shade as well as in sunshine. If the plants are judiciously shaded and watered they will continue in flower a long time, and they certainly have a fine effect arranged in the greenhouse amongst hardwooded plants, as the lively green of the foliage is always pleasing.—J. Douglas, *Loxford Hall.*

FLORIST NOTES AT THE ROYAL HORTICULTURAL SOCIETY'S SHOW.

No greater contrast could possibly be afforded between the scene outside in the garden, and that in the conservatory and arcades, on the day of the first spring show of the season—a cold miserable day, with the snow falling in large flakes, but melting as it fell, and making everything cold, damp, and miserable; within, a display of beauty and fragrance than which I have never seen better at this period of the year, and one could only regret that so few visitors were there to enjoy the rich treat that was provided for them. As the details of the Exhibition have already been given, it will only be needful for me to say a little about some of the more prominent of the florists' flowers, that formed, indeed, the great bulk of the Exhibition.

The Hyacinths were unusually fine, and here, as of late years, Mr. William Paul was pre-eminent. Time was when Mr. Cutbush ran him so closely that it was oftentimes most difficult to decide where the superiority lay, so neck-and-neck was the running. Now we must say the race is won easily in a canter, and it was almost impossible to conceive anything finer than the Hyacinths which gained the chief prizes of the day—prizes, by-the-by, not at all commensurate with the value and beauty of the flowers. Novelties in Hyacinths there were not many, Mr. W. Paul being the only exhibitor; and of his six, two, Sir Henry Havelock and Bird of Paradise, have been exhibited before. Blondin is a flower of peculiar colour and of great substance, a sort of French white, with the back of the petals light blue, throwing a very peculiar shade over the whole flower; large pips, with a well-formed and stout truss—altogether a fine flower. Lord Shaftesbury is a large white flower, very coarse, pips of immense size but few of them, and altogether just one of those sorts of flowers which I should not care to grow. Prince Albert Victor is a fine deep-coloured flower, very showy, deep crimson, the centre of each petal with a deeper band of the same colour; the truss fine and compact—certainly the best flower of the six. Linnæus is a dark crimson erise, a somewhat confused truss. Sir Henry Havelock, exhibited last year, is a flower of peculiar colour, more fitted for giving variety to a stage than for any brilliancy in itself; while Bird of Paradise, also exhibited last year, is a flower of that scarce class single yellow Hyacinths, and is one of a peculiarly delicate shade of primrose. Amongst new flowers in other collections were Vunxbaak and King of the Blues, both of which sustained the high character gained by them when exhibited before.

Is the Cyclamen to become a florists' flower? is a question which might well be asked when looking at the variety and beauty of the collections exhibited by Messrs. E. G. Henderson and Son and Mr. Wiggins, gardener to Mr. Beck, of Isleworth. I was busily engaged examining many fine varieties in the latter collection, when I was joined by a very eminent plantsman, who put a question which will decide this in the negative; for he asked, How can you propagate these bulbs? And there in truth seems the difficulty, or else I do not see why they should not be as fixed in their character as many of those flowers which we already have formed into collections. Mr. Wiggins stated that he had cut out the eyes, and hoped in that way to have increased them, but added that he had failed in doing so. For those, however, who regard this beautiful spring flower for its value as a decorative plant, the collection which he exhibited was one well calculated to give encouragement. I do not speak now of the large and beautifully grown plants which obtained deservedly the first prize, but of the collection of smaller plants. These were all in 48-pots, with from twelve to twenty blooms on each plant, and yet the seed from which these were grown was only sown in March, 1866. They were potted off as soon as large enough, kept growing in a warm house all the year until the leaves were well formed, then placed in a cool frame, and the result was the very beautiful lot of plants which were exhibited. Of these the finest were Oriflamme, a large, fine, high-coloured flower; rubrum grandiflorum, a larger and finer flower than the old rubrum; and giganteum, a fine large white. One of the six which obtained the first prize was purpureum, very dwarf, with remarkably curious foliage, round and somewhat cupped. It was quite the model of what a Cyclamen ought to be. The increased favour with which this beautiful spring flower has come to be regarded, so useful as it is for decoration and also for bouquets, is shown by the far greater number of cultivators, and a knowledge of how very soon a large number of plants may be obtained from seed will probably tend to increase them; for this reason Mr. Wiggins's information may be useful to some of the readers of The Journal of Horticulture.

It is early in the season to talk about Verbenas; yet as far as we can judge, a very valuable addition to their number was shown by Mr. Cruickshanks, gardener to W. Jones Loyd, Esq., Langleybury, near Watford. It is in the style of Striata perfecta and Napoleone Rossi, but apparently better than either of those flowers. The former is, indeed, so very subject to mildew that it has been almost displaced by the latter. If the habit of Lady of Langleybury, as the new flower is called, be equal to its beauty, it will decidedly put the foreign flower aside. This, if it be, as is said, a seedling from Purple King, is likely to be the case; and the profusion of bloom exhibited would rather tend to show that it was very free. A seedling Azalea called Hector was shown by Messrs. F. & A. Smith, of Dulwich, the colour of which was very peculiar—an intense deep crimson; but of this we shall probably see more by-and-by.

Nothing charmed me more than the freshness and beauty of the pot Roses, but as yet nothing new has been exhibited, and only established favourites were brought forward; the sole exception being Princess Mary of Cambridge, of Messrs. Paul and Son, which has greatly improved since it was first exhibited. Nothing could be more brilliantly delicate than some of the blooms on the plants exhibited. It has been the case with it as with the Lord Clyde of the same raisers: coldly looked upon at first, it has gradually risen in estimation, and I believe will take its place amongst the favourite flowers of the rosarian. The delicate rosy pink of its well-shaped flowers contrasted well with the more brilliant colours, and to me it has evidently proved itself an admirable variety for forcing.

Of Camellias I have again to remark that it seems to be an unaccountable fact that a plant so easily managed, so capable of bearing the "fatigues" consequent on an exhibition, and so easy of carriage, should be so sparingly exhibited; and even the cut blooms shown gave but a poor idea of the magnificence and beauty of this queen of flowering shrubs, so universal a favourite as it is; surely this reproach ought to be taken away, and something really worthy of it exhibited.—D., *Deal.*

GARDEN WALK EDGING.

Seeing you have given place to a note on this subject from Aryshire, I send another by an old Aryshire florist, which may be deemed "nae wee sheep shank" in that way.

"Jock Migomery," for that was his name, was known to a good

number of your readers in the west of Scotland; in blooming Auriculas, Tulips, and Ranunculuses, he was not easily beaten, and to have a nice edging for his plots, he hit upon the following device:—

Jock being a pretty good judge of wethers, knew well when to plant himself among the fleshers, to secure a crop of the needful—viz., sheeps' trotters, and by the armful, too, for he was an adept at "felling twa dogs with one bone," first by producing good Scotch Kail with the trotters, and then the sheep shanks served to make the edging in the following manner:—He put the shanks into the earth to the joint, one by one, close to each other, and they produced one of the neatest of edges I have seen, and would afford a good pattern for a potter to copy from for an earthenware edging.—Stewarton.

YORK REGENT POTATOES.

The following is extracted from a communication to the Rev. W. F. Radclyffe:—

"After the disease of Potatoes about twenty years ago, great quantities of Potatoes were sent to London from Yorkshire, of a breed called Scotch Roughs, on account of the roughness of their skins. They created a great noise in London under the new name of York Regents, given them by the cockney dealers, and commanded a great price in the market. Some few gentlemen sent to London for some of them back again, and found them nothing but Scotch Roughs, called also Ruffianers. Hence the name of York Regents. The farmers and country people about here grow scarcely any sort but Scotch Roughs, Ruffianers, or Ruffs, as the same Potatoes are called. Thousands of acres are grown, and these are bought up by men who come round among the farmers, and are called 'Potato Badgers.' They send them all to London under the name of York Regents. All round Potatoes sent to London are named by the dealers 'York Regents,' because they command a better price under that name. Mr. Booth, of Killerby, obtained a new Potato out of Scotland last spring; they are very large, white, good, and good croppers. He sold twenty acres of them to a London dealer; and they were all sold as York Regents! York Regents have a rough skin at one end like scales. If your York Regents are smooth like a Dalmahoy, they are not the right sort. I could find you twenty sorts of the so-called York Regents; some white, some yellow, some good, some bad."

Mr. Radclyffe then adds—"I commenced planting here (Okeford Fitzpaine) February 13th, under grass clots, having previously washed the 'cuts' with vitriol and water. The vitriol discovers a bad Potato within half an hour of its application, by causing discoloration. It may, moreover, remove any fungus about the set. I at present fancy that the disease arises from imperfection of the cellular tissue. Potatoes require rain at the end of May, and none afterwards. Heavy rains in July, when the temperature begins to fall, I think produce the calamity by filling the Potato with more sap than the leaves can elaborate; and hence as an effect the leaves decay."

CUCUMBER FAILURES.

I have had to cultivate winter Cucumbers for some years and in various ways, and I am confident that deep borders and over-watering are the great mistakes in winter Cucumber-growing.

Last summer I had the pleasure of looking over the splendid gardens of Earl Ducie, at Tortworth Court, under the management of Mr. Cramb, the intelligent and skilful gardener. After traversing house after house we came to that devoted to Cucumbers, and I must say it was the most masterly example of Cucumber-growing which I ever witnessed.

The house, a large one to be devoted entirely to Cucumbers, is a lean-to, with a pit running quite to the front. This pit was filled with leaves for bottom heat, but I forgot to ask if there were pipes under the bed or not; and the plants were in pots of rather a large size, which were half plunged in the bed of leaves at equal distances. I was particularly interested in the system of pruning and training adopted; the plants appeared to be allowed to run three parts up the house, and being then stopped developed at every joint shoots which were themselves stopped at a few joints. Although planted twelve months every plant was perfectly clean, healthy, and in no way interfering with its neighbours, and there were several scores of fully developed fruit.

I have adopted the same mode of cultivation—namely, growing Cucumbers in pots plunged to half their depth, and I have succeeded where I always failed before on the border plan.

My conveniences being small, about the middle of September I prepared three 12-inch pots by well draining them, chiefly with the siftings from the potting bench, and filling up the remaining space with good loam and leaf mould. I planted the Cucumbers at once, and the result has been most satisfactory, although the temperature was often down to 55° at night. The plants grew rapidly, and set plenty of fruit, which swelled out to their full size, and I have not had one of those wretched club-headed fruits so common in winter, and which are a sure indication of something being wrong at the roots. One advantage from the pots is that the roots find their way out at the holes in the bottoms of the pots and run among the fermenting leaves, consequently watering is rarely wanted. The plants are not particular about temperature for a few hours if the roots are under favourable conditions and thriving. I would rather find the temperature of my house rather low than strive too much against the weather, but I find a few mats of great service in frosty weather; it will not then be necessary to shade from the first gleam of sunshine that may occur, as is often the case when the plants are in wet borders and weakened by fire heat.—Charles Edwards, *The Gardens, Springfield, near Bristol.*

GARDENER'S DELIGHT PEA—NAITJI ORANGE.

Much appears in "our Journal" about early Peas. Shall I be voted a Goth if I own that I care more about the later sorts? At any rate there is one sort I have not seen named in your pages which I should like, with your permission, to introduce to the notice of all whom it may concern.

I think it was about the year 1859 that my factotum James called my attention to some remarkably fine vigorous stalks of Peas growing amongst a row of Veitch's Perfection—there might be a dozen of them. The pods turned out to be of a corresponding size, literally stuffed with great handsome Peas. I requested that every pod might be carefully saved; this was done, the seed sown in the following year, and a splendid row of Peas I had. They turned out to be very prolific, fine in flavour, and a beautiful colour when dressed. I became curious to know what sort had been thus introduced to me, and consulted all the gardeners I met with just at that time. I happened to have the officials and gardeners connected with our Cottage Gardening Society lunching with me, and of course the new Pea was closely examined and discussed, and greatly admired. There was much good-humoured disputing on the matter, but it soon became evident that no one knew the Pea.

I then sent a small quantity of seed to Mr. J. Smith, now curator, Royal Gardens, Kew, but who at that time had charge of the gardens at Sion House. He told me afterwards, when I had the pleasure of seeing him, that after he had once sent a supply of my Peas to the house there was a constant demand for them, and the cook leaving soon afterwards to take the management of a club, entreated Mr. Smith to give him "if it were only half a pint" of seed, that he might be sure to have the sort for his own supply. The succeeding cook became an equally warm admirer of what was then known at Sion as the "Cornish Pea."

On finding from such high authority as Mr. J. Smith, in addition to the eagerness with which the Pea was sought after by various friends, that it was not merely a fancy of my own, and of James, but that it was superior to the ordinary sorts, I took small packet to Mr. Pince, of Exeter, in the spring of 1863, and requested he would be so good as to grow it for his private table, and let me know what he thought of it. In July I received the following letter from him, the postscript being in his own handwriting:—"We are very much obliged for the Peas sent us some time since under the name of "Gardener's Delight," which we sowed and are daily gathering, and have no hesitation in saying that it is the finest and best-flavoured Pea we have ever seen. We shall esteem it a great favour if you will furnish us with its history, or inform us where the seed is to be procured."—"Mr. Pince presents his respectful compliments and thanks to Miss P. for the delicious Pea of which she kindly sent him some seeds."

I wrote Mr Pince in reply, and sent him two quarts of seed to add to his own supply, on condition that he would introduce the "Gardener's Delight" (the name I had given the Pea from the admiration bestowed upon it), to the public as soon as possible. In October of the same year Mr. Smith called on me,

and I showed him Mr. Pince's testimonial. He said, "I am quite of the same opinion," and told me it was the only Pea produced at Northumberland House on the grand entertainment of the Prince and Princess of Wales. It was the favourite Pea of the Duke and Duchess of Northumberland, as well as of their cooks!

Now I really think I have given you a certificate of merit equal to any that can be produced in behalf of any vegetable grown. I have only to add that I am not in the remotest degree interested in the sale of the seed, but I like to enjoy a flavour "on the palate of my friend," and are not all gardeners and garden lovers friends?—and, especially, are not all who read "our Journal" friends? The seed was sent into the market last year by Mr. Pince, and can still, I believe, be obtained either from him or Messrs. Hurst & Son, Leadenhall Street.

I regret I have none to offer this year, but my last I sent the other day to Mr. Poynter, the very intelligent nurserymen at Taunton.

If you are not weary of this long story I should like to say a word about the mode of sowing Peas.

Can you, or any of your correspondents, tell me anything about the Natjee or Naitji Orange? A friend who had received some plants from the Cape kindly gave me one; he has forgotten from whence it was originally brought into South Africa, and I am desirous to obtain any amount of information possible touching the home and habits of the tree, and the character of its fruit, said to be delicious.—C. P.

MR. WILLIAM PAUL'S SHOW OF SPRING FLOWERS.

This exhibition, held in the eastern conservatory arcade in the Royal Horticultural Society's gardens, South Kensington, opened on Tuesday last, and will continue till the 6th of April. It is in all respects a most admirable display, whether the general arrangement and the choice of the flowers or their individual excellence be considered; in fact, nothing less could be expected from a horticulturist of Mr. Paul's reputation, and who this year, as last, has taken the foremost position as a cultivator of spring flowers. His successes at the recent shows render comment on the merits of the Hyacinths, Tulips, and many of the other subjects composing the exhibition almost superfluous, indeed many of the flowers have been already specially noticed; we shall therefore confine ourselves to giving a short account of the arrangement.

Commencing at the conservatory end of the arcade, the first stage is filled with a large group of Tulips of many varieties in beautiful bloom, with cut blooms of Roses in front. Next, there is in the centre of the arcade a group of remarkably fine pot Roses, conspicuous among which are Alba Rosa and President; then at a short distance there is an oblong table on which are ranged single rows of Chinese Primroses and Crocuses, a double row of Tulips, five rows of Hyacinths, and Narcissuses at the back. The Hyacinths on this stage are arranged in bands of several rows of each colour across the longitudinal rows, and with very good effect. The fourth group is a mixed one of Azaleas, Deutzias, Cytisus, Acacias, Ericastemons, Correas, Cinerarias, Mrs. Pollock Pelargonium, &c.; and the fifth an octagonal stage of Roses, similar to the second group, and containing fine examples of Pierre Notting, Baron Prevost, Maréchal Niel, and other fine varieties in excellent bloom. Next there is a mass of Lilacs, double-flowering Peaches, Clematises, Rhododendrons, Variegated Weigela rosea, Gueldres Rose, &c.; adjoining this a stage filled with a mixed collection of plants in flower; and lastly, a stage on which are ranged about 130 pots of Hyacinths of numerous varieties and with magnificent spikes.

But this is not all; along the front of the arcade, there is a series of tables variously filled. Perhaps the most interesting to many is that at the end farthest from the conservatory on which are placed several of the handsome new varieties of Aucuba, male and female plants in flower, also the handsome Ligustrum japonicum maculatum, variegated Euonymus, &c., with fruiting Aucubas at the back. The second of these tables has small plants of Cytisus Atleeanus as an edging, then a row of variegated Hydrangea, Euonymus radicans variegatus, and at the back E. macrophyllus with beautiful shining green leaves, and the rose and white variegated Vitis Labrusca. On the third table Isolepis and Cytisus, placed alternately, serve as an edging to Cyclamens, Mignonette, pink Hyacinths, and white and blue varieties at the back. The fourth table is filled with Chinese Primulas and Deutzia gracilia, with Dielytra spectabilia at the back; the fifth with purple Crocuses, white and blush Hyacinths, and Narcissuses; the sixth with Isolepis gracilia, Cytisus, mixed Crocuses, Lily of the Valley, and Hyacinths; and the seventh with Hyacinths, Narcissus, &c.

This show, one of the most attractive which have ever been seen at this season, reflects the greatest credit on the skill, enterprise, and resources of Mr. W. Paul, and no one we are confident would willingly miss the gratification which it is calculated to afford.

ROYAL HORTICULTURAL SOCIETY,

March 26th.

At three o'clock Mr. W. Paul delivered a lecture in the Council-room on Spring Flowers, of which his exhibition has been just noticed. Dr. Hegg, F.L.S., in the chair. After a few introductory observations by the Chairman, Mr. Paul proceeded—

The task assigned to me to-day is to give you a popular account of this exhibition. I shall purposely avoid all scientific details; my remarks will be chiefly cultural. Working on the conception that some present would like to hear how these plants are produced, would like to see such in their own gardens, I shall content myself with showing in as concise a manner as possible how that object may be attained.

It is true there is a short road to the possession of these plants—namely, to buy them as at present exhibited. But by purchasing a plant when in the climax of its beauty one does not realise all the pleasure and satisfaction derivable from cultivating it from an early period of growth. It will, I think, be allowed that every stage of progress in a plant is perfect in its way, and there is a freshness, change, and beauty in the gradual development.

I shall commence my observations by bracketing together Hyacinths, Tulips, Narcissi, and Crocuses, which are usually spoken of collectively as Dutch bulbs. Be it observed, these bulbs are among the least costly, most easily cultivated, and most effective of early flowers. Although called Dutch bulbs, originally Hyacinths and Tulips are natives of the Levant, and have been known in this country for nearly three hundred years. Now, however, their descendants, much altered in size, form, and colour, are or should be annually imported from Holland, where their cultivation is carried out on so large a scale as to be an important branch of national industry.

I may perhaps be allowed to remark here that the best Dutch bulbs usually find their way into the hands of the English dealers. The Hyacinths sent to this country are grown from offsets of the root, and are usually four or five years old. In favourable seasons, with free-growing-sorts, or in the event of a scarcity of any particular sort, three-years-old roots are sometimes sent, but such do not produce the finest spikes of flowers. Dutch bulbs usually arrive in England in the month of August, packed in bags and boxes, in what is termed a dry state, in which they somewhat resemble Onions.

Now, with regard to the culture of these bulbs, I will assume that the cultivator has obtained possession of good bulbs, bulbs which have not been hastily forced into the market, but which have the stamp and stamina of age, and which have been skilfully handled throughout their previous stages of development. Without this there is little hope of reaching a high standard of excellence. If you start wrong no after-skill or attention will set you altogether right. Let us then assume the possession of good bulbs. Now, they may be grown in pots or boxes in earth, or in glasses in water. I will first relate how they are managed when grown in earth. Sandy loam enriched by a free addition of manure is the best compost in which to plant them. Plant in October, leaving the apex or crown of the bulb just protruding above the soil, and afterwards thoroughly soak the soil with water. When drained, place the boxes, pots, or vases, in which they are planted on the level soil, covering them over with 6 inches of cocoa fibre, old tan, or cinder ashes. Now, the length of time they should remain under this covering will depend on the period at which they are wanted to bloom. If removed in January, gradually inured to heat and light, well watered if dry, and placed first in a cold frame, and then in a greenhouse with gentle heat, they will bloom in great perfection early in March. If removed in December and a little more heat employed, they will flower early in February. If removed in November they should, a fair amount of heat being employed, flower in January. It should be borne in mind, that a plentiful supply of water is requisite at the period when the leaves and flower-spikes are extending, and during the whole period of flowering. The spikes of flowers should also be tied up almost day by day to preserve their symmetry.

This, then, is the way in which the Hyacinths before you are produced in pots. The rationale of cultivation in glasses in water is the same; but instead of pots, glasses are used; instead of earth, water; instead of covering with fibre we place the glasses, if transparent, in a dark cupboard principally for the reason that the roots feed most freely in the dark. But we must not keep them in the dark too long. Gradually inure them to the light when the roots are fairly developed and before the leaves are 2 inches long. Their season of flowering,

as with Hyacinths in pots, will depend on the temperature of the house or room in which they are grown. It was remarked to me to-day, "Your Hyacinths are unusually short and stout. I have some good spikes, but they are slender, attenuated, and disposed to droop. How is this?" My answer is, They have had at some period of their growth too much heat or too little light; either, or a combination of both influences, would produce the elongation complained of. Tulips, Narcissi, and Crocuses which are of a kindred nature with Hyacinths, should be managed in the same way: all of them may likewise be planted in beds or borders out of doors, a few inches under the soil in the month of November, when the Crocuses will flower in February; the Hyacinths, Tulips, and Narcissi in March and April.

The next plant for consideration is the *Lily of the Valley*. Although a native plant abounding in the woods and hedge-rows in many parts of Britain, it must not be supposed that it could be suddenly drawn thence and produced in the beautiful state in which it is exhibited at our flower shows. There is a major variety, selected doubtless for its size at some former period, and planted in rich soil, where by gross feeding the plant has attained an unusual development. The contents of these pots are prepared for forcing in the following way:—Small pieces or crowns are planted in beds in rich ground, and allowed to remain there for three or four years till the whole bed becomes one mass of roots thickly studded with flowering crowns. They are then cut out with the spade into small patches to suit the size of the pots in which they are grown, placed in the pots in the autumn, when, by subjecting them to different degrees of heat, a succession of flowers may be obtained throughout the winter and spring.

The *Cyclamen* is one of the most beautiful of spring flowers: nothing surpasses it for purity and sweetness. It is a native of Sicily. The plants are raised from seed, which should be sown in June in pots filled with equal parts of sand, loam, and peat. The seed should be quite fresh to ensure germination, and requires to be raised under glass. The plants will not usually flower until the second spring, after which they should continue to increase in size and beauty for many years. When the seedlings lose their leaves, which they should not do till they are about twelve months old, it is important that they be kept in a dry state. Moisture when in a state of rest will certainly injure, and probably destroy them.

We come now to the *Chinese Primula*. This plant is a native of China, whence it was introduced in 1820. It is raised from seeds, which should be sown in the months of May, June, and July successively, in pots filled with light sandy soil, and kept under glass. When the seedlings have made their third or fourth leaf they should be transplanted into small pots, giving each plant a separate pot, and removing it at short intervals into pots of larger sizes. This plant does not dislike heat, but if much heat is employed plenty of air should also be given, or the colours of the flowers will be washy and pale.

There is a curious and interesting fact in the history of plants which the Chinese Primula serves well to illustrate. There is a tendency in most plants to vary in form, size, and colour when transferred from their natural or wild state and subjected to cultivation. The type of the Chinese Primrose of to-day was pink or lilac, and not more than one-fourth of the present size. By culture, through the means of a rich soil and careful attendance, the size was increased, and by watching for even slight variations in form and colour, and selecting such as the parents of future races, the change went gradually on. A break, as it is termed, was at length obtained; that is, a departure from the normal form. A standard of excellence was set up, but it was found that such, although occasionally realised, could not suddenly be retained. Seeds saved from the red Primula would sometimes produce both red and white-flowered plants, and seeds saved from white Primulas would do the same, while the seedlings varied greatly in size, colour, and form. The break was retained, but the result was uncertain. The next step was to fix the alteration. Year after year plants of the altered and more approved form, closely resembling each other, were selected and placed apart, and from these *alone*, seeds were saved until the altered form was fixed again; that is, seed saved from red Primulas produced, with almost unerring certainty, red-flowered varieties; seed saved from white Primulas, white-flowered varieties—both preserving the increased size, altered forms, and clear decided colours of their immediate progenitors. Take another instance:—There are before you plants of the new double crimson Thorn. Strange as it may seem, this is descended from the common Whitethorn or May of our hedges; but this has not happened suddenly, but by a gradation of changes. Most observers will doubtless have noticed in our hedges that some of the plants produce flowers of a pink tinge, though still with single flowers. This is the "break" previously explained: this was step 1. Some of the seedlings raised from these would give flowers of a still deeper colour. This was step 2, which we recognise in the single rose-coloured Thorn, a variety found growing in a hedge at Geddington, in Northamptonshire. Some of the offspring of this would be of a still deeper colour—step 3, the new scarlet Thorn. A seedling or a sport from this or the original May of our hedge-rows would produce double flowers, and here was step 4, the double white or new double pink Thorn. Now I am not asserting that all these steps are authentically recorded, but it is well known to those who are practically engaged in these matters that such is the rule of progress; but the origin of this new double crimson Thorn we do know. It is not a seedling, but what is called a sport from the double pink Thorn—that is, a branch of the double pink produced flowers of this deep and beautiful hue. The branch was budded and grafted, and the young plants so obtained produced flowers of the same vivid colour. In the same way have been produced the many varieties of the common Hawthorn; one of the most notable, the Weeping Thorn, having been selected from a bed of seedlings by General Monkton. The upright-growing variety was also selected from a bed of seedlings by Mr. Renalds, of Brentford. Now, it is the same with leaves as with flowers. Take the Pelargoniums before you. They are all originally produced from green-leaved varieties, either from sports of the branch, or, later in their history, from seeds of the sports so fixed. The first variegated Pelargonium originated by a branch of a green-leaved variety producing variegated leaves. This branch was cultivated till the habit became fixed. The seeds of these were saved and sown, and a brood of young plants was produced retaining the variegation of the parent. The plants before you, which are seedlings, show this tendency; on some there are both green and variegated leaves. Now, to fix either character is the problem. If we wish to retain the green character we nip off all the variegated leaves; if we wish to retain the variegated character we nip off all the green leaves from time to time as they appear, till the plant produces leaves of the one character only. It is the same with the Aucubas before you. The green-leaved variety is the normal form; the variegated kinds are sports either from branches or from seeds. This is, in brief, the process that has been worked out in all cultivated plants where leaves or flowers show a wide divergence from the normal form. I shall conclude my observations to-day with a few remarks on the Camellia.

The *Camellia* is a native of China, a country which has supplied us with many of our richest horticultural treasures. The type of our modern Camellias is a plant with small, single, red flowers, in which the yellow stamens are pleasingly conspicuous. There are now many hundred double sorts, some few of which have been introduced at various times from China, but the majority have been raised from seed in Italy, France, Belgium, England, and America. Most of the double Camellias are grafted on the single red or type, which is found to strike easily from cuttings placed in a cold pit in sandy soil, in the autumn. The grafting is usually performed late in summer, the stocks chosen being two years old. The soil in which Camellias appear to grow best is rough loamy peat with a plentiful admixture of sand. The process of repotting should take place in summer, when the new growth is pretty well matured and the flower-buds about the size of a French Bean. When potting, thorough drainage should be secured. Now, although the plant is nearly hardy, successfully resisting several degrees of frost, it is not well suited for the open air in our climate, on account of the cold and uncertainty of the English spring. Spring is its season of growth, and it then requires a high temperature to induce a vigorous and well-matured growth. At this time, when blooming and growing, a plentiful supply of water should be given, but at all other times, especially in autumn and early winter, water should be given but sparingly. The premature decay and dropping of the flower-buds so often complained of in Camellias, usually arises from too dry a state of the roots at the season of growth, or too wet a state of the roots when the growth is matured, and the plant is in a state of comparative rest. So soon as the growth is matured, it is well to remove the plants from under glass, placing them on the north side of a wall or hedge where they are protected from the midday sun. Camellias may be planted out with advantage in the borders of conservatories, where they will attain the height of 20 or 30 feet, forming umbrageous trees of matchless beauty.

The chief points to look to in their cultivation, then, are these:—

1. To secure thorough drainage in the soil.
2. To give heat and moisture during the periods of flowering and growth.
3. To water sparingly from the time the growth is completed till the flower-buds are about the size of a pea.
4. To secure the leaves from being blistered by the sun, green glass or Hartley's rough plate glass is desirable for the Camellia-house; if ordinary glass be used it should be slightly whitewashed in the month of March.

We have yet to speak of Roses and other forced hardy shrubs; but these will be made the subject of another short paper on Tuesday next.

At the close of the lecture a vote of thanks was given to Mr. Paul for the interesting and instructive information he laid before the Meeting.

On the table of the Council-room were exhibited the prizes offered by the Proprietors of the *Gardeners' Chronicle* and THE JOURNAL OF HORTICULTURE at the Great Bury Show in July next, and which elicited the admiration of all present. The former is an elegant richly chased silver claret jug of beautiful design, and the latter consisted of two very handsome richly gilt ormolu French clocks, with panels and face of painted and jewelled porcelain.

EARLY PEAS.

My experience with Carter's First Crop Pea coincides with that of your correspondent "RONNOC."

Last year I sowed on a south border, side by side, and on

the same day the following sorts—Carter's First Crop, Dickson's First and Best, Dillistone's Early, and Sangster's No. 1. They came in for use on the following dates:—Dickson's First and Best, June 11th; Carter's First Crop, June 16th; the other two sorts about a week afterwards: so that with me Dickson's proved to be five days earlier than Carter's First Crop, and what was of more importance, Dickson's gave double the gatherings that First Crop did, and continued in bearing much longer. I have no hesitation in saying that Dickson's Pea is the very best early Pea I have grown. I discarded all but Dickson's, and Sangster's, for early work this season.

I have no interest in stating the above facts, more than that we may prove which really are the earliest and best vegetables to grow generally. I should like to hear of more gardeners stating their opinions of the above Peas, or any others they think better.—JOHN BROOKES, *Four Oaks Park, Warwickshire.*

ROYAL BOTANIC SOCIETY'S FIRST SPRING SHOW.

THIS was held on Saturday last, chiefly in the conservatory instead of, as usual, in a tent—an innovation which was judged expedient in consequence of the wintry weather experienced up to the previous evening; and although the temperature became milder the change was far from favourable to the success of a flower show, for rain fell more or less till late in the afternoon. In its principal features the Exhibition resembled that held at South Kensington on the previous Tuesday—in fact, a great portion of the subjects shown were reproduced on this occasion, and having been already noticed, will here claim only a passing mention.

Of Hyacinths, Mr. W. Paul's set of twelve were far superior to those from any other exhibitor, and consisted of magnificent examples of Mont Blanc, Van Speyk, Princess Mary of Cambridge, Grandeur à Merveille, Baron Von Tuyll, King of the Blues, Koh-i-Noor, Vuurhaak, Sir Henry Havelock, Solfaterre, Blondin, and Prince Albert. Mr. W. Cutbush, of Barnet, who was second in the Nurserymen's Class, had very good spikes of Von Schiller, Charles Dickens, Cavaignac, General Havelock, Argus, and Ida; and Mr. Kirtland, Albion Nursery, Stoke Newington, was third.

Amateurs' collections of twelve were not up to the mark. Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., Regents' Park, was first; and Mr. Bartlett, Hammersmith, second.

Of new varieties, Mr. W. Paul, who was the only exhibitor, had the first prize for Linnæus, Prince Albert Victor, Lord Shaftesbury, and Blondin, described last week; La Grandesse, with broader and flatter bells than Mont Blanc, and Victor Emmanuel, pale crimson, striped with deeper crimson in the centre of each petal. Mr. W. Paul contributed, in addition, a numerous and very fine collection, in which Carmine, though not remarkable for the size of its spike, was conspicuous by its vivid crimson colour. Lord Cowley, between the silvery grey of Blondin and the pale blue of Princess Mary, was also noticeable.

Tulips were also shown in great beauty by Mr. W. Paul, who was first for eighteen with Vermilion Brilliant; Roi Pepin, white flaked with crimson; Couleur Cardinal, violet-shaded deep red; White Pottebakker; Proserpine, violet-shaded rose; Fabiola, rosy purple and white; Van der Neer, purple shaded with violet; Globe de Rigaut, purple streaked with white; and Keizerskroon. In a numerous collection from the same exhibitor, Brutus rectifié, yellow heavily feathered with crimson scarlet, was very showy. Mr. Kirtland was second, Mr. Cutbush, Barnet, third.

Cyclamens were again shown in great beauty, and Mr. Wiggins and Messrs. E. G. Henderson took the first and second prizes, while Mr. Todman, gardener to R. Hudson, Esq., Clapham Common, was third.

Of Narcissus, an excellent collection was furnished by Mr. Paul, among which Bazelman major, Queen of Yellows, yellow with a deep yellow cup; and Soleil d'Or, yellow with an orange cup, were large and fine. Mr. Paul, Mr. Cutbush, and Mr. Todman likewise furnished fine pots of Lily of the Valley.

Chinese Primulas raised from Mr. Williams's strain of seed, exhibited by Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, were again first, Mr. Todman being second, and Mr. Wheeler third. Prizes were likewise awarded to Mr. Paul and Mr. Todman for cut blooms of Camellias; and Mr. Bull produced plants of the same previously shown at Kensington.

Roses furnished by Mr. W. Paul, in remarkable perfection for the season, constituted an important feature of the display, and it may be useful to notice some of the best. These were Le Rhone with some eighteen blooms and buds, Alba Rosa always very beautiful in spring, President, a splendid specimen with about two dozen blooms; Elizabeth Vigneron, Senateur Vaisse, Cœur de Lion with nine fine blooms; Madame de Stella not fully out, but will be very beautiful; and Madame Victor Verdier. Several stands of cut blooms were furnished by the same exhibitor, and by Messrs. Paul & Son, to both of whom extra prizes were awarded.

For miscellaneous flowering and fine-foliaged plants Mr. Williams, Holloway, was first with Azalea Triumphans in fine bloom, Genetyllis fuchsioides, an excellent specimen of Eriostemon pulchellum, Chamærops humilis, Variegated Aloe-leaved Yucca, and Cordyline indivisa, the last remarkably fine. Mr. Bull, who was second, had a very fine example of Cibotium princeps measuring at least 9 feet across the fronds, Bruhea dulcis, Dracæna australis latifolia, his fine specimen fruiting Aucuba, &c. Mr. Wheeler was third with a collection in which we noticed a good Alocasia metallica, Dicksonia antarctica, Pandanus javanicus variegatus, and a well-bloomed plant of Azalea indica alba. A collection was also furnished by Mr. Paul, consisting of Rhododendrons, Roses, Deutzias, Clematises, Lilacs, flowering Peaches, the fine standard Genista purgans shown at Kensington, and other plants. Mr. Cutbush, Barnet, contributed his fine plants of Mignonette, Acacia Drummondi, and Erica Wilmoreana superba, double-flowering Prunus sinensis, &c.; and Mr. Williams a numerous collection in which were Statice Holfordii, Francisca confertiflora, Anthurium Scherzerianum, Vanda insignis, Genetyllis, variegated Ananassa, Anthurium acaule with five of its long spadices, plaited like a whip-thong, a fine specimen of Agave filifera, Todea pellucida, Lomarias, Gleichenia dicarpa, &c. Of other subjects Mr. Wheeler contributed Chinese Azaleas, and Messrs. Dobson & Son Cinerarias in excellent bloom, the kinds being Duke of Cambridge, large velvety purplish crimson self; John Spencer, paler in colour; Estelle, white, dark disk, and rosy purple edge; Admiration (Dobson), in the same style, but with a broader edge; Favourite, cream white, dark disk, narrow purple edge; and Lady Theodora Grosvenor (Fairbairn), white with deep bluish violet edge. Messrs. Dobson received an extra prize for this collection, and similar prizes were awarded to Mr. Bartlett for Filmy Ferns and miscellaneous flowering plants, to Mr. Ford, gardener to W. E. Hubbard, Esq., St. Leonard's Lodge, Horsham, for Apples and Pears in excellent preservation, and to Mr. Bull and Mr. Williams for collections of new and rare plants, those from the former being nearly the same as exhibited at Kensington.

Among novelties first-class certificates were awarded for the following:—To Mr. Wiggins for a beautiful Cattleya Warscewiczii with a very richly-coloured lip; to Messrs. Jackson, of Kingston, for a variety called delicata, pale pink, with a yellow throat: to Mr. Bull, for Odontoglossum Alexandræ, Cypripedium concolor, and Dayanum; Aralia spathulata and crassifolia picta, Agave macrocantha, Camellia Lavinia Maggi rosea, a beautiful deep rose-coloured variety; variegated Phajus; and Rogeria hybrida, with Laurustinus-like heads of pale rose-coloured blossom. Mr. Williams had similar awards for Amaryllis Ixion, scarlet, with a white band towards the base of the petals; and for Odontoglossum maculosum, the singular flowers of which are green, dotted with brown, and have a hairy white lip. First-class certificates were also awarded to Mr. W. Paul, for his new Hybrid Perpetual Rose Cœur de Lion; and to Mr. Cruickshanks, gardener to W. Jones Loyd, Esq., Langleybury, for his lilac-striped Verbena Lady of Langleybury. Second-class certificates were awarded to Mr. Williams for Ananassa Porteana, differing from the common variegated Pine Apple in having a broad band of yellow down the centre of each leaf, the rest of the leaf being olive green; and Azalea Charmer, a promising rosy-pink variety; to Mr. Bull, for Odontoglossum gloriosum; and to Messrs. E. G. Henderson, for Pyrethrum Golden Feather. The same firm also contributed a collection of tricolor Pelargoniums, as did Mr. Watson, of St. Albans, who had among others, Mrs. Dix and Miss Watson which had previously received certificates.

PROTECTING PEAS AND BEANS.

"R. F.," in "Doings of the Last Week," contributed to your Journal for March 14th, details his method of protecting Beans and Peas from pheasants and partridges, and in a previous Number refers to the "Pea Protector," an illustrated advertisement of which appears in the Journal, and also a description by Mr. J. Douglas, at 199. I beg to state that for several years I have used here, Messrs. Barnard & Bishop's inch mesh galvanised wire netting, 24 inches wide, also advertised in your Journal, for the same purpose, and find it a perfect protection against the smallest birds. It is easily fixed by bending it arch-like over the row, when the Peas begin to break the ground, and pegging it down at the edges with common hooked sticks; in fact, it almost retains its arch-like form without any peg. It may be cut into any length required, and when done with is easily rolled up and stowed away. Its roomy arch also gives ample space for the Peas to grow without clinging to it, until they are quite safe from sparrows, and in such weather as we experience this spring, it affords an excellent skeleton for old matting or litter for protection from frosts and cutting winds. The Pea protector is smaller in its arch, and apparently more expensive, it also seems to be slighter, and I should imagine, therefore, less durable.

My employer has also used the netting above referred to for some years as a guard for young trees, cutting it into lengths of 6, 8, or 10 feet, according to the height of the bole of the tree required to be guarded, and putting it up lengthwise, and lacing it up round the tree with a galvanised wire, and it certainly is much the cheapest and most effective guard used. It perfectly

protects the tree from rabbits, hares, sheep, cattle, and horses. It only requires three or four stakes for the sheep and cattle to rub against, or any fancy guard may be put round the tree on which it is, for unless some such addition be made the sheep will rub the young tree, and wire will cut the bark off very fatally, in consequence of the trunk of the tree swelling and growing until the guard is filled. I have this year unlaced several guards which have been on the trees for years, and they are used for younger trees, and seem as good as ever.

The netting also makes the bottom of young Quickset hedges impervious, if these are planted double about a foot or 18 inches apart, and a piece of netting is strained lengthwise between the rows of Quickset, and fastened up with slight wooden stakes until the quick grows and interlaces the netting, and supports it, which will be the case by the time the stakes have decayed. The hedge may then be clipped over the top of the netting, and the latter be allowed permanently to remain. For short lengths of hedges, and where it is desired to exclude game and poultry, this will be found an admirable plan; of course, a larger mesh may be used, and a narrower width of netting if desired.—William Chastney, *Hamond Lodge, King's Lynn.*

TOWN GARDENING.

(*Concluded from page* 208.)

I must finally state my experience of trees and shrubs, which, however, is not very extensive. Evergreens are generally hopeless, excepting the Box. This cannot be said to flourish; but by putting in plants of a good size at first, and frequently applying the hose to their leaves with a pretty strong flush of water, they may be kept green, and will grow a little. This remark, however, does not apply to Box-edging for borders, which never looks well, and becomes in places very bare.

As regards trees, the great principle to be kept in view is to select those which shed their bark more or less annually, and thus keep continually presenting new portions of healthy surface to the atmosphere. The trees which do this most freely are the Birch and the Plane. The first loses its bark gradually in circular strips; from the second it comes off in blotches. And what more elegant than a drooping Birch, or handsomer in foliage than the Plane? The Weeping Ash splits its bark in long perpendicular seams, sometimes the entire length of the stem, and becomes a very ornamental tree; but care must be taken not to let the branches touch the ground, the grass will not grow under it if they do. This meed of praise does not extend to the common Ash, which ought never to be admitted into a small garden, whether in town or country; for if it succeeds, the roots of one tree only will absorb the moisture of the entire garden: like a young cuckoo in a thrush's nest, it takes full possession, to the destruction of the previous occupants. Nothing will flourish within a radius of 30 or 40 feet of it, as I have often noticed when observing Ash trees in a corn or Turnip field. The Poplar of most kinds splits its bark well, and succeeds in smoke; and even the old stumpy Sycamore when well played upon with water, and treated with an occasional Turkish bath in the form of a scrubbing-brush and soft soap, showed signs of revival, and really began to grow. It was, however, one of a peculiar and delicate species, the name of which I have not discovered. It appeared like a hybrid between a Lime and a Sycamore, in which idea I was confirmed by traces of a cincture on its stem, just below where it diverged into branches, as if it had been grafted; by the few leaves which sprang from its roots having more of the ordinary Sycamore form than those on the branches; and from its occasionally under its new treatment putting forth blossoms, which had a slight fragrance, and of which the bees were fond, but they never produced the keys or seed-vessels. The leaves, however, were soon affected by frost, still more so by a cold or rough wind, and often the tree was nearly stripped of them by the end of June, though a second crop came. On the whole it was not a tree suited for a town garden.

Of flowering trees and shrubs, the Laburnum grows and flowers the best, the Red Hawthorn next. Lilacs require to be well cut-in and watered; they rarely would put forth a flower, but they form a good bushy screen if planted before unsightly objects which it is desirable in a garden to conceal. The Acacia and Almond, though they do well in the squares in the west end of London where there is less smoke, maintained a faint struggle for life only; and my system was to expel everything which conveyed an idea of misery. For the same reason I banished the Ribes, the Gueldres Rose, the Honeysuckle, and the Privet; the last I often pity, with its profusion of black wires, when I see it in the open spaces of the metropolis. I found the wall of the garden facing the east partially covered with Irish Ivy when I succeeded to it. It grew, but it required constant nailing and trouble; for the teeth, or small centipedal lobes, which it puts out at the back of the stems would not retain their hold on the wall. There is, however, a small species with a bright leaf beautifully veined which clings to the wall, but its dying leaves disfigure it, and litter the beds throughout the summer. The Irish Ivy I prevented doing so by having all the old leaves closely sheared off as soon as the new buds began to start in the spring. In two or three weeks' time the wall was again covered with new verdure. On the opposite wall I planted Jasmine, white and yellow. The white flowered annually, more or less, by keeping it well cut-in, but its shoots were always weak. The yellow was a stronger sort and had a larger flower, and the difficulty has been rather to restrain its growth than to promote it. I have seen in some towns the Virginian Creeper do, the scarlet and crimson leaves of which, when decaying, are so rich and beautiful, but it would not grow with me. I apprehend that the climate of England is unfavourable to its perfect development, as I have never observed it in this country put forth its small coral spray, as I have seen it when growing wild in Switzerland. I have also tried the wild English Clematis, called Virgin's Bower, which bore plenty of leaves, but never flowered.

I have now "said my say," and have only to add in conclusion that the garden took up but little of my time, and required little trouble beyond what I could safely trust to a servant or labouring man, as sweeping up, mowing, &c. My time was too fully occupied by engagements of a far more important character to permit of my being much in it. My chief enjoyment on week days during the proper season consisted in snatching those fragments of time which arose when I returned home exhausted from the cultivation of plants of a very different nature (the *Immortelles*), and was five or ten minutes too early for a meal. I then went at once into the garden, and my nervous system was more strengthened and refreshed thereby than by throwing myself into an easy chair, the mind being so completely relieved by the change of objects and ideas. On Sundays it was a still greater treat. Then with my family we had more intervals of leisure; then there was little or no smoke—no overlookers; the busy hum from the neighbouring warehouses was hushed, all was tranquil, and we could sit out with a book at a distance from the south or open end, and when we lifted our eyes and looked beyond saw nothing but sunny hills and cheerful fields; and thus we enjoyed our *rus in urbe* with grateful satisfaction and thankfulness to God.—Philokepos.

MESSRS. CUTBUSH'S SHOW OF SPRING FLOWERS.

This commenced at the Crystal Palace on Saturday last, and will continue open until the 6th of next month. It is, as usual, a very attractive and excellent display, which will doubtless be inspected with interest and pleasure by multitudes of visitors. The plants are admirably arranged, and occupy about 240 feet run of tabling divided down the centre, one side being chiefly filled with Hyacinths and Tulips, the other with a miscellaneous collection of other spring-flowering plants; and at each end is a good flowering specimen of white Azalea indica.

Taking first the side on which are ranged the bulbs we find the first or front row to consist of variegated Pelargoniums, such as Mrs. Pollock, Cloth of Gold, Golden Chain, and Lady Plymouth; the second row of Hyacinths and Tulips mixed; the third row of the same flowers separately and in about equal proportions; and the fourth or back row of Hyacinths only. Among the latter there is a remarkably large and fine spike of Florence Nightingale; and of other varieties of the red class Cavaignac, Macaulay, Von Schiller, Princess Clothilde, Duc de Malakoff, and double Duke of Wellington are excellent. Blues are well represented in Charles Dickens, Grand Lilas, Nimrod, and some others; and the very dark or black kinds in General Havelock and Mimosa. Of the white varieties there are several excellent spikes of Mont Blanc, and some others. Haydn, mauve, is also very pretty. There are a few new kinds, noticeable among which are Le Grand Jaune, buff yellow; Princess Helena, with large, pure white bells; Mrs. James Cutbush, with white bells of good substance; Princess Anna,

a pleasing bright rosy pink variety; and Elise, crimson, edged with pale rose. Of Tulips there is a fine collection, including the Tournesols, Keizerskroon, Vermilion Brilliant, and other showy varieties, besides several new ones, among which the best appear to be Chrysolora, bright yellow; Zilvareen Standard, rosy crimson, flaked with white; Joost Van Vondell, large, crimson and white; Salvator Rosa, double, rose, striped with deeper rose; and Grand Duc, yellow, flaked with red.

The miscellaneous collection of spring-flowering plants principally consists of numerous plants of Dielytra spectabilis, which are very effective. Cytisus racemosus, Deutzias, Acacia Drummondi, Chinese Azaleas, Cinerarias, Mignouette, Gueldres Rose, Lily of the Valley, and the pretty double Prunus sinensis; there are also some Dracænas, and, as an edging to the whole in front, variegated Pelargoniums interspersed with Isolepis gracilis. We also noticed at one end of the table a plate of Messrs. Cutbush's beautifully marked variety of Lilium auratum, called splendidum, in which the central stripes are dull red.

WEEDS ON WALKS, AND HOW TO DESTROY THEM.

Whatever difference of opinion there may exist as to the proper materials for making a walk, every one must agree that weeds destroy its beauty.

Now, as weeds on a walk are unquestionably fatal to its good appearance, their removal or destruction is aimed at by all; but it was not until within the last few years that the application of chemical substances, with the latter object in view, found much favour, and weeding and hoeing were, therefore, the order of the day. A prejudice against the use of one of the most effective destructive agents for a long time kept it from being resorted to, and some people even persisted in the opinion that it would not accomplish the desired end. The old-fashioned mode of employing hand labour was accordingly pursued, and resulted in walks being often allowed to become very rough before the cleaning time came round again.

To remedy this state of things various expedients have been suggested, and different substances tried; some, and by far the greater number, having for their object the destruction of the young weeds on the spot, without disturbing the walk; others being designed to render the walk itself impervious to the roots of weeds, or fatal to them. This, in most cases, is sought to be effected by preparing a walk with a hard, smooth surface of asphalt, concrete, cement, or some similar substance, affording no hold for the roots of the grosser and larger vegetation, but not altogether exempt from the attacks of fungi or mosses, when time has changed the obnoxious substances, and rendered the surface suitable for such vegetation. Asphalt, and similar materials, however useful for walks, are, nevertheless, not yet sufficiently cheap to allow of their being employed everywhere, and weeds are most likely to grow on such walks as are the least likely to be formed of such materials, for it is on walks in out-of-the-way places, that most weeds are produced, not on those over which there is the most traffic.

In districts where mineral substances obnoxious to vegetation can be obtained in sufficient quantity, there is not much difficulty in keeping weeds down, as, for instance, in the case of some mining districts, more especially in the west of England, where a greenish grey sand strongly impregnated with some mineral poison is found in quantity. Certain chemical works also furnish a refuse substance, which can be applied to the same purpose. Such materials, however, are not so generally available as to meet all requirements, consequently we must adopt others more within our reach. I hope that in time something better than any substance we now possess may be discovered—something cheap, easy of application, effectual, and not likely to injure the walks to which it is applied; but till then I fear we must continue to use salt, of which the only fault is, that it makes a damp walk damper still; still its use, I think, is extending, for notwithstanding this drawback, there is nothing as yet to be had at so reasonable a rate, and which is so efficacious. The mere fact of its rendering a damp walk a little damper is not sufficient to cause its condemnation, inasmuch as some walks are better when a little damp than when too dry, and this is the case with many of those here. I have used salt for many years with advantage, and in the past year I employed it more extensively than ever, and I see no reason to regret having done so.

Of the substances used to destroy weeds on walks, one of the best I have seen was a sort of crude arsenic, which was employed about a dozen years ago, and applied, I think, either pounded or in a diluted state. This left no trace behind it, and the walk was clean, and looked as if it would take a long time to return to a state fit for vegetation; but I only saw the effects of the application on one occasion. I have, however, had more than one trial with copperas as a weed-destroyer, but it left a dirty stain, and was so difficult to apply that I cannot recommend it, whereas salt is cleanly, and all trace of it is removed by the first shower. In some places it has been used dissolved in hot water, but the latter is inconvenient to obtain, and I imagine salt acts quite as well without it. Salt, it is true, ought not to remain on a walk when there is company at a place, but by taking advantage of showery weather, it will speedily disappear. Of course, care must be taken in applying it that none be thrown on the edging, otherwise it will kill it; but a little practice will enable any one to do this without danger of such a result. The quantity to apply must depend on circumstances: if the walk is one passing through a meadow where grass seeds abound, and where it is, perhaps, but little used, weeds will grow rapidly, and salt may be more liberally applied; but where there is only a little moss to destroy, a very small dusting will suffice. The best plan for the inexperienced to adopt is to use very little salt at first, to be careful not to scatter any over the roots of Box, if such is grown as an edging, removing the weeds from that part by other means, and if the quantity used do not effect the object, to repeat the application after a time, taking care not to salt too much.

If the keeping down of weeds were the only advantage of using salt, its adoption might be open to many objections; but it likewise keeps worms away, and destroys the weeds without loosening the gravel or other materials composing the walk. This advantage is of the greatest importance where the number of persons who traverse the walks daily is small, for however carefully weeds are picked up by hand, or forced up by the hoe, some disturbance of the surface must be caused, and before that can be fairly remedied, the operation has to be repeated, and a loose, unpleasant surface is the result, or constant rolling becomes necessary. Now with salt nothing is disturbed, the weeds wither and disappear in a few days, and even if they are deep-rooted ones, such as Dandelions and Docks, an extra pinch over the crown will generally kill them.

The substances of which walks may be formed having been treated of in this Journal, I need only remark that where very indifferent materials are necessarily used (which is often enough the case, and yet with such a tolerably good walk may be made), it is of the greatest importance not to disturb this rough material by hunting after weeds; salt is then of the utmost consequence; and where the soil is rich, and wormcasts are troublesome, salt effectually keeps them down. Some examples of this kind we have had here, and the more we use salt the more its benefits appear, for after applying it for two or three years we find a less quantity effect our object, and the advantage of not having the walk disturbed is of consequence on hilly ground, where heavy rains do such injury to walks having a loose surface. I may add that most of our walks have a slight coating of shells, which being broken fine are easy and smooth to walk upon, and after rain the walks are more firm than in dry weather, excepting such as are disturbed by storm-floods, and salting renders it unnecessary to loosen such a light material. Taking, therefore, salt with all its disadvantages, I should be sorry to have to do without it. If, however, any one can discover an agent superior to salt in respect to cheapness, efficacy, and ease of application, I shall be glad to hear of it, and will give it a trial.—J. Robson.

ACCUMULATED HEAT.

I have heard that Mr. Scott Russell has given his opinion that the fire at the Crystal Palace was caused by an explosion of gas in the flue of the hot-water apparatus, which to me appears very improbable. Accidents from the explosion of gas were very common, when the old smoke flue was more generally employed to heat glass houses.

One of the first lessons a young gardener received was, to push back the hot coals well into the flue, and to put the fresh fuel in front of the fire. The fire then burnt gradually towards the door, and all gas given off by the heated fuel was obliged to pass over the fire, and was, of course, consumed. If, on the contrary, the fresh coal was thrown beyond the fire, the gas was wasted, and might cause mischief.

A mixture of coal gas and atmospheric air is explosive. Gas

in a flue *must* be mixed with atmospheric air, and if ignited an explosion, not a fire, will be the consequence. I have seen several of such accidents; the flues were badly cracked, and much smoke and sulphurous acid gas, mixed with vapour of coal tar, were discharged into the house, and all the plants killed or injured; but I never heard of a fire so caused. Under the boiler of a hot-water apparatus the space is generally so short which is provided for fuel, that such an accident is much less likely to occur than in a flue, and I cannot but think the fire in the Crystal Palace is much more likely to be another case of accumulated heat, recently discussed in your columns. —J. R. Pearson, *Chilwell.*

OUT IN THE WEST.

Some of your readers and yourselves may have inquired what has become of me.

Well, to state my tale shortly, I am at Chicago, on the shores of Lake Michigan; and having been here twelve months I think I may tell what may be of use to some of your readers, and give a little information of how we live, and the features and capabilities of the country.

Of the city, in the first place, I may say that if ever there was a wonder in the world Chicago is one, and the rate at which it increases winter and summer is more like that we read of in tales of eastern magic than a sober reality; but here the city is—in solid marble, stone, brick, iron, and wood, the latter predominating. London has few buildings that can surpass the homes of the merchant princes, or their warehouses and stores. About nine thousand buildings of all kinds were erected during 1866, and many at a distance will wonder how a demand could arise for so many buildings, but the wide country that is being settled north, south, and west must be taken into account. The Chicago people have an eye to progress, and have made a network of railways over the boundless prairies on every side of them. These prairies are being settled very rapidly by emigrants from nearly every European nation, and being easily cultivated, the settlers soon become prosperous farmers, and the market for their produce is Chicago, with its lake and railway outlets to almost any part of the American continent and to Europe.

The prairies are almost destitute of trees save on the edges of streams, and for twenty or thirty miles the eye will not see a tree, save such as have been planted by the farmers about their homesteads. The soil is a rich black mould, in many places from 3 to 10 feet deep, formed by ages of decayed vegetation. Those who do not own a yard of land, but can mow well, make good livings when they are within fifteen or twenty miles of the city, for they mow the unoccupied prairie, and make hay, which they sell in the city, and I know several who have made a good start in the world by doing so. Others take to shooting game in the season, and make well out in the autumn and early part of winter. In the lakes and rivers fish abound; any one can catch them, and many make a living by doing so. My son, a boy twelve years old, has caught as many as a hundred good perch per day. I have seen men and boys pull fish weighing 8 or 10 lbs. out of the lake with the throw-line. The country is rich in itself, and any willing handy man who is sober can get on. Chicago is no place for clerks, for women do a good deal of book-keeping here; still, somehow, male clerks are absorbed; but I know one instance of a young Englishman who came here as a clerk, but he had to turn farm labourer. As a gardener a man may expect to have a little rough work, but there are good places to be had.

Chicago is a city of flowers, and they command a good price; Camellias sell for a dollar each, and very small bouquets will in winter bring from two to five dollars. There are numerous English, Dutch, and Germans engaged in the business, with some Frenchmen and Americans, and all seem to make a living. Most of the greenhouses are of wood, except those attached to private dwellings. Vines are beginning to be very much cultivated under glass, and some gentlemen have built very large vineries. One gentleman named Dunham, who is now in Europe, has a large collection of Vines, and his name is worthy of mention for his liberal behaviour towards his chief gardener, an Englishman named Williams, who has been with him eleven years, and for whom he has built a house which cost 1500 dollars, besides paying him a good salary. There are many good places in the State, but there are few at which stove plants are kept. Gardeners must not expect to find all they could wish, but all may live if they will only take things somewhat as they come for a time. I have done a considerable amount of carpenter's work since I came out in fitting up greenhouses and frames, and the foreman carpenter at the school said I would soon make a first-rate carpenter.

I must now say a little about the wild flowers and fruit. Grapes grow wild in the woods skirting the prairies, and are abundant. There are also plenty of wild Plums, which produce larger fruit than I have seen them do in England; but Hazel nuts are smaller, and the bushes scarcely grow more than 4 feet high in the woods along the southern shore of Lake Michigan, which is probably owing to the poor sandy character of the soil. Further down in the State of Illinois I have seen them larger. On the south side of Chicago the formation of the surface is peculiar, and the trees are mostly Oaks, of which I have only seen three species—the Quercus tinctoria, nigra, and rubra. The shrubs found underneath them are Cornus canadensis or Dogwood, with several species of Spiræas. There are some other plants which I have not been able to name yet, but I may give your readers an account of them in a future paper. For about two miles west from the lake the land lies in ridges with, of course, alternate furrows, and these ridges and furrows stretch ten or twelve miles along the lake shore. The ridges are very sandy, and upon them grow the only trees and shrubs to be seen, save those which have been planted by the residents. The furrows are wet land called sloughs or "slews" here, and in them but few woody or shrubby plants grow. Early in spring they are literally covered with Iris versicolor; this is succeeded by an abundance of wild Strawberries which are very fine; my children have often gathered two quarts of the fruit in half an hour. The cultivated Strawberry lives and does well on these "slew" lands; one gardener near us planted twenty acres last spring. Some very pretty orchidaceous plants grow in these places, also a small upright Lobelia not unlike Lobelia erinus. Towards autumn there are some pretty Chelones, and a very pretty plant the flower of which much resembles that of our Foxglove, Sesamum indicum, or Oily Grain as it is called here.

Along the sandy shore of the lake and in the woods early in spring may be seen some thousands of Phlox maculata, and I wonder it has never been cultivated in England, it would be a gem in shrubberies, especially in sandy lands. There is also a pretty Violet (Viola palmata), abundant here, as well as three or four other species. I found Convallaria racemosa plentifully, and the pretty two-leaved Claytonia virginica. Another early summer flower is the Dodecatheon meadia, of which the umbels of pinkish white flowers are very pretty. Batschia canescens and B. longiflora are pretty yellow and orange-coloured flowers, and are plentiful on the lake shore, and in the woods. Lupines are very plentiful in the woods, and so is Osmunda regalis in the swampy parts, and some other Ferns that I have not made out yet, having no good work on American Ferns. I have made a collection of many other plants, of which when I have leisure I hope to give your readers an account.

I will now offer a few remarks on the crops we grow out here. Onions produce fine crops with poor tillage, and in poor sandy land I have seen them 6 or 8 inches in diameter, not here and there odd ones, but the majority of the bulbs of those sizes; out on the prairies they grow wonderfully well, and so do Carrots, Beet, Parsnips, and Asparagus. Cabbages do tolerably well, but are liable to "break their hearts;" Cauliflowers poorly on account of the almost dry heat in summer, and they are bitter. I have seen no Curled Greens. Early and late Peas succeed well, but not summer Peas. Cucumbers of the small sorts, Tomatoes, Pumpkins, Squashes, and various kinds of Vegetable Marrows, along with Musk and Water Melons are "great institutions," and are grown everywhere, and by almost everybody. I grew about seventy bushels of Tomatoes, about forty bushels of Cucumbers, and of Squashes and Pumpkins I do not know how much. Indian Corn is raised in large quantities, especially the sweet varieties for eating in a green state.

Flowers such as Verbenas, Pelargoniums, Phlox Drummondi, Petunias, Balsams, Cockscombs, Globe Amaranths, and Dahlias do remarkably well. Roses are soon spoiled in the summer, but the Perpetuals do well before and after the summer heats are passed. The tender annuals I have named have to be raised under glass as in England, and bedded out in the beginning of June. Ageratums, French Marigolds, and most kinds of annuals do well and make a good show after the heat of summer. German Asters and Stocks should be sown twice or thrice, for they are soon over. Chicago is a great place for bedding out, as nearly every house has a piece of land attached, and bedding plants are raised extensively by the florists.

I will now say a little about the climate. About the beginning of December the severe frosts set in, and last more or

less until March. During this time we have two or three "cold snaps" as they are called here, when the thermometer falls 18° or 20° below zero; then one takes to dancing early in the morning, in fact as soon as he jumps out of bed, and everything he touches in the way of iron is thrown down again as if red hot. Fortunately these cold snaps only last about three days at a time, and the useful and pretty American stoves soon drive out the frost so as to render the temperature bearable. Almost all work is at a standstill whilst the cold snaps continue. It freezes almost every night during the period I have named, but on most days we have plenty of sun—in fact, a fine clear atmosphere, and greenhouse plants do well. There are few out-door evergreens save Arbor Vitæ and Firs. From March to the beginning of May we have occasional frosts, but about the 10th of May corn planting and Cucumber sowing are performed, and the corn will grow in eight or nine weeks as many feet high, so that when vegetation does start fairly no time is lost. About September we begin to have slight frosts again, and then come the autumn tints, which are beyond my power to fairly describe. The leaves of the Oak assume almost all the tints of the rainbow; and where Oaks are intermixed with other trees, such as Poplars and Willows, with their pale yellow leaves, they are a sight not to be forgotten. One range of forest will look like an immense flower garden consisting of miles of Verbenas, Petunias, and Calceolarias; another part will look like miles of "shot silk" and the hues will keep changing according to the hour of the day. This season is called the "Indian summer," and I think it the best part of the year in America, for there are fine, warm, sunny days and cool nights.

I will now make a few remarks as to the expense of getting here and the cost of land, for I know many are anxious to come out; in fact, the Mayor of Windsor some time ago wrote to the Mayor of Chicago for reliable information, in order to make such known among English farmers who have been much affected by the cattle plague. The expense, which is not great, depends on the part of a ship in which a person takes a berth. For a passenger in the first or second cabins it is from £15 to £20, in the steerage from £4 10*s.* to £8 8*s.* The agents in England will book passengers through to any part of America; but to those who contemplate coming over, I would say, Book only across the Atlantic, if they can afford to spend £1 or 30*s.* more to Chicago, for they will save it in expenses if they do not travel by emigrant trains, which are so long on the road, and sometimes stop one or two nights at different depôts, which puts the traveller to extra expense. On this side of the Atlantic passengers can book through by express trains, and will as a rule be more civilly treated than in the emigrant cars, besides having more comfortable cars to ride in. The express trains run here in from twenty-four to forty hours according to the weather, and, the emigrant trains will take from four to six days and nights. If a person can spare about 1½ dollar he can go to bed at night in the express trains, lie there as comfortably as if at home, and awake in the morning a long way on his journey; but the cars are comfortable in the United States, while those for second-class passengers are dreary, uncushioned, and wooden-seated in Canada. I do not know how the third class cars are, but I was very glad that I had but one short night's ride through Western Canada. Emigrants will find clean water in the cars and water-closets; and if they bring a can with a lid on that will hold one or two quarts, they may make tea or coffee for themselves in the cars, which will save money if they carry provisions along with them.

Land is very dear near the cities—that is, from ten to twelve miles from them. Near Chicago land sells at from 200 to 2000 dollars per acre, but out on the prairies it sells at from 7 to 50 dollars per acre. A man with £500 or £600 would be in a good position for life, but many have extensive farms all paid for who came here as labourers. I must now conclude with the advice to all contemplating coming out, Do not expect to find a fortune without hard work and care.—John Hague, *Reform Schools, Chicago, Illinois.*—(*Late of Ashton-under-Lyne.*)

[Heartily welcomed was this communication. Some of our readers will remember that Mr. Hague and ourselves co-operated in exertions to help the Lancashire weavers fond of botany during the Cotton famine.—Eds.]

NOTES AND GLEANINGS.

There is now in bloom at the Denbies, near Dorking, a handsome plant of Rhododendron longifolium, one of the Sikkim species. Mr. Drewett, under whose skilful management it has been induced to flower, says, "The plant is about 6 feet high, and covered with flowering buds, I believe seventy in all. It is certainly one of the most beautiful Rhododendrons I ever saw. I have had the plant, with others of its class, since 1851; so you will perceive it requires a good share of patience to wait for the flower."

—— On Saturday next, the 30th inst., Dr. Masters will deliver the first of a series of lectures on "Plant Architecture" at the rooms of the Royal Horticultural Society, South Kensington, at three o'clock.

WORK FOR THE WEEK.

KITCHEN GARDEN.

The classification of work is at all times of the utmost importance, more especially at this period. There are maxims in gardening established by long practice, which if borne in mind by the amateur or the tyro, would save in no small degree the task of repetition in calenders. For instance; in sowing-operations there are certain vegetables for which, in order to produce a continuous succession, no better rule can be offered than to sow a succession as soon as the preceding sowing is fairly above ground. Such may be said of Peas, Beans, Horn Carrots for drawing young, Radishes, Spinach, small salads, &c. Again, with regard to plants for early-forcing purposes, the forming of buds or shoots by one set introduced into the forcing-pit should be the signal for the introduction of a succession. In matters of propagation, likewise, the cuttings of various flowers for a summer display should be collected, if at all possible, simultaneously, struck in a frame or pit together, and nursed together afterwards. They always meet with more steady and uniform treatment under such a course, and it conduces likewise to the easy dispatch of business. I shall this week say a few words about *Asparagus* planting. It is of the utmost importance in kitchen gardening to give every attention to a proper rotation of crops. It is recommended to grow all the *Celery* in what are called Scotch beds, these beds to be from 5 to 6 feet wide, and every year to break up an old Asparagus-bed or two in order to force it; part of the Celery ground being prepared in a special way with a view to its being laid down in Asparagus. The preparation consists in trenching it much deeper than the rest, and in burying a considerable quantity of fresh vegetable matter in the bottom of the trench, old refuse, vegetables, Cabbage stalks, weeds, or, what is very good, half-rotten leaves, mixed with a little manure used for linings in the previous year. The upper part of the beds has more rotten manure, of course, for the Celery. In taking up the Celery for use, the bed is broken-up to a great depth, and the alleys with it, and thrown into a ridge, which ridge remains as a fallow until planting-time, when it is merely levelled. It may be planted about the middle of April. Dress Asparagus-beds, let the surface be carefully forked over so as not to injure the crowns of the plants. The soil should be finely broken so that no compact portions may remain to obstruct the progress of the shoots. *Artichokes*, dress. *Cardoons*, sow a few. *Peas*, keep up successions of these. Dickson's Favourite, Bishop's New Long-podded, Knight's Dwarf, and Flack's Imperial Victory may now be sown. *Potatoes*, plant. The frost having made a premature clearance of Broccoli and other crops usually succeeded by Potatoes, the latter will derive advantage from an earlier possession of the ground than would have otherwise been the case. Sow *Parsnips*, *Beet*, *Turnips*, *Radishes*, Paris Cos *Lettuce*, *Savoy*, *Nasturtium*, *Sweet Basil*, &c.

FRUIT GARDEN.

Peach and Nectarine trees on walls are now coming into full bloom, and may require slight protection at night, especially when coping-boards have not been put up. Gauze of cotton material may be obtained for little more than 1*d.* a-yard, and if only two breadths of such be placed judiciously along the front of the wall, a sufficient protection will be afforded against such frosts as usually occur after this period. The substance being light is not apt to be torn by the wind as are some thicker fabrics. The grafting of Plums and Cherries should be concluded as soon as possible, and that of Pears and Apples proceeded with. In grafting old trees of the last-mentioned, two or even three-year-old wood may be used if very strong young shoots cannot be obtained.

FLOWER GARDEN.

The planting of shrubs, laying of Box, &c., if not already finished must now be brought to a close as soon as possible

before dry weather sets in. Finish digging if not already done, turn gravel, edge and clean walks, &c. Examine half-hardy plants, such as have been protected through this severe winter, and remove the covering, unless an unfavourable change in the weather takes place. Do not yet prune tender Roses, they might be much injured by so doing until they begin to grow, which will soon be the case if fine weather sets in. Sow Sweet Peas in borders and pots, also hardy annuals. Plant-out from the reserve garden Phloxes, Pentstemons, &c. Auriculas, those beautiful spring flowers, will now require very great attention. They may have occasional warm and genial showers any time previous to the development of the flowers. The pots to be kept free from weeds, giving the plants all the air possible, avoiding rough windy weather. Polyanthuses, look the beds carefully over and any plants loosened by the frosts should be immediately secured. Tulips in spite of the past severe weather are looking well. Keep the wet from lodging in the hearts of the plants; it is apt at this season to be frozen, and the mass of ice has a pernicious effect on the rising bud. Pansy and Pink-beds must be carefully dressed with some decayed vegetable matter, omitting the rich compost till later in the spring.

GREENHOUSE AND CONSERVATORY.

A thorough revision of all the various tribes in the different houses where plant-growing and forcing are carried on in a mixed way is necessary at one period or other during the spring, the shutting-up of late vineries or Peach-houses generally offering facilities for this arrangement, and of course for relieving the other structures. It is of the greatest importance to keep plants classified or in families as much as possible, which, as well as facilitating business, will add a zest to these structures. Exhausted forcing stock should by all means have a pit or frame fitted up especially for it. The plants should by no means be allowed to mix with the general stock. A bed of fermenting material of a mild character, covered 6 or 8 inches deep with tan and well topped up with linings, and matted at night, is required. A bottom heat of 80°, with frequent syringings, and plunging the plants in it, will restore them to perfect heath and prepare them for another campaign. Fuchsias will be benefited by the application of clear liquid manure. Very liberal shifts will be necessary at this period, more especially with those intended for very large specimens. Cinerarias for late blooming should, if pot-bound, be shifted likewise. Let plants in need of water have immediate attention; nothing conduces more to the encouragement of insects than suffering plants to become checked through drought. This is now the proper time to regulate the branches of Pelargoniums intended for early flowering. Let the shoots be brought into their exact position and carefully tied to short stakes. Those intended for late flowering should be potted immediately in their blooming-pots, and kept cool to promote the production of wood rather than flowers at this time.

PITS AND FRAMES.

Follow the directions given in last week's calendar. Look over bedding-out stock, and if you are short of any kinds now is the time to remedy the evil by putting in cuttings or seeds. Some of the more hardy plants might be removed to colder situations to harden, but by no means expose them to the mercy of the weather yet. Brompton and Ten-week Stocks that have been kept in pots in frames through winter might be prepared by exposure to the air for a short time for planting out. Shut up early every fine day to forward the growth of any sickly plants, or such as are most wanted to be increased, and prick off tender annuals as fast as room can be made for them. Water them sparingly until they begin to grow freely for fear of damp, &c. German and Ten-week Stocks may also be sown in fresh soil in a cold frame, or one that will soon cool down, and a few Early German Asters on a slight heat.—W. Keane.

DOINGS OF THE LAST WEEK.

What a change from Saturday, the 16th, to Saturday, the 23rd of March!—a difference in temperature of more than 30°. Then, again, a drifting, dry, frosted snow on the 22nd, and a warm rain dispersing the last relics of the snow on the 23rd. During the week up to that time, with the exception of some rough jobs, all out-door work was reduced to a minimum, as even covering and uncovering pits and frames was let alone, except where there was extra heat, as in the case of Cucumbers. We think it, therefore, a good opportunity to say a few words to meet the wants and wishes of several correspondents on stoves and boilers, and more especially as we have had to alter the arrangements of an iron stove in our orchard-house.

Stoves.—On commencing these gossiping articles, one of the first had reference to an iron stove which we made use of when in the severe frost of 1860 and 1861 our boiler for the conservatory gave way, and we had to depend on an old iron stove that had been discarded from an entrance-hall, for keeping out the frost. There was fixed to the stove, about 6 inches from the top, on one side, a horizontal pipe, about 3½ inches in diameter, and 5½ feet in length, and this was so rivetted to the stove, that we concluded that any attempt to move the pipe would bring the stove itself in its ricketty state to grief. This long pipe, and lengthened by another almost as long, was very well, so long as the stove stood in the entrance-hall with the pipe terminating in a lofty chimney, and thus securing plenty of draught; but it was contrary to all our experience of stoves to have such a long horizontal pipe terminated with a short upright one as a chimney, and therefore we have constantly recommended that for all such stoves the horizontal pipe from the stove, before it takes a perpendicular or upright direction, should not exceed from 12 to 24 inches in length. A correspondent particularly wishes to know "why a little iron stove with the smoke-flue or pipe proceeding at once from the top of the stove should not answer as well as the having the smoke pipe proceeding from the side, as in the section of a stove shown in the 'Heating Manual,' page 18." We do not perceive why such a stove would not answer for general purposes where merely heating a corridor, warehouse, &c., is concerned, or even when a very mild heat was applied in a small plant-house; but we would object to such a stove in a plant-house of any extent, chiefly because the heat would too freely pass up the chimney-pipe, and that would become very hot, whilst the lower part of the stove was comparatively cool; the great merit of all stoves used in plant-houses should be the giving out enough of heat economically, and yet the stove itself never in any part to be so hot as to burn the particles floating in the air in its vicinity. We would prefer, too, that all stoves for such gardening purposes should have a moveable top, as then the inside can be cleaned and examined at pleasure.

We would not wish for a better stove for a large house than that to which we have been referring. It is 2 feet 9 inches in height, and 18 inches square, outside measure, the bottom raised a couple of inches or so from the ground. There are two moveable tops, the inner one a piece of sheet iron, resting in a small groove, and when put on, the groove, and even this inner top, are covered with sand; then the plain outer top is put on, and when at work the top is covered with an iron vessel for evaporating moisture. The fireplace, which stands in the middle of the stove, is made of iron, about 13 inches square, and a foot deep. This iron firebox is lined inside with four fire-brick pieces, about 10 inches deep, above the firebars, leaving the iron frame 2 inches above them on three sides, but bevelled down to form a plate between the box and the circular opening for fuel. The firebox is 9 inches square, and as much in depth, whilst the rim of iron prevents the fuel dropping into the open spaces between the firebox and the outside of the stove. This small firebox is sufficient to give out a great heat, whilst the open space all round it prevents the outside of the stove from ever becoming dangerously or offensively hot. A small pan is placed below the firebars for ashes and for draught at lighting; but when fairly set to work, and a continuous mild heat from a slow combustion is wanted, the ashpan is shut close, and air admitted by two or three slits half an inch long, and one-eighth of an inch in width.

We have used this old stove for several purposes, and mostly in a surreptitious manner. When we placed it in the orchard-house, we had to make it as inconspicuous as possible. We durst not meddle then with the longitudinal-pipe, and showing anything in the way of a chimney was out of the question. These considerations, and an idea, confirmed rather than otherwise, that such stoves, if sunk somewhat, spread their heat more equally than those standing on the surface, led to our sinking this stove near the front of the lean-to house 11½ feet in width, and sufficiently low to permit the horizontal-pipe and another joined to it to pass from the stove beneath the pathway and outside the back wall, and there terminate in an upright low chimney of earthenware pipes.

The space in which the stove stands after being bricked round on the slant, is 5 feet long, 3 feet wide, and 3 feet deep, leaving plenty of room in front to attend to the stove. The latter was kept black for free radiation, and the bricks kept whitewashed to reflect the heat radiated from the stove. We have reason to

be satisfied with this arrangement, for though the stove is placed in the middle of the house, 75 feet in length, we have frequently tested the temperature of the ends and centre, and in still weather found them within very little of each other.

Now, though we found this stove very useful, we have been thus particular in noticing its details that others may beware of trying long horizontal-pipes, or even those rising a little from the stove as ours did; for in very misty weather we found a difficulty in securing a draught, and when the wind was from the north, we were often obliged to take out the plate outside the wall, which we had left for sweeping purposes, and light a fire there, which, heating the outside chimney, gave us a draught from the stove. The collection of a tarry substance and hard soot in the course of years, in the long horizontal-pipe which the brush passed through without taking it out, helped also to impair the draught. On Wednesday, every man was thoroughly beaten after trying every conceivable plan to make smoke pass from the stove to the chimney, with a northerly wind as it was. This determined us to do at once what, but for the circumstances referred to, we would have done years ago. We had our blacksmith in the morning to drill holes all round the old pipe, and then use the cutting-chisel between so as to sever the pipe 2 feet from the stove. We would have preferred it nearer, but there was a copper band round the pipe at that distance, which we thought would be security for getting it more easily out; for if we had been at all rough the old stove would have dropped to pieces. A few of the garden men did all the rest. The pipe previously passed through a small brick-drain; the sides of this formed a cesspool as it were for the shortened pipe to end in. An old nine-feet cast-iron pipe with a three-inch bore, was set on the top of the cesspool, the other end passing through the roof, a square of glass being removed. The bottom end was secured by two layers of bricks and mortar, the end of the opening filled so as to be easily pulled out for sweeping, and a piece of zinc the size of the large square of glass, with a hole for the pipe, fastened as a square of glass; the fire was lighted, and the stove that would not draw the day before would, with an open ashpit-door, have sent the half-burned shavings out at the end of the chimney-pipe. The whole alteration was done in a few hours of the forenoon, and but for having the three-inch pipe beside us, we would have preferred one of four-inches, or even greater diameter, with a piece of zinc bent over the outer end to prevent the rain or snow falling into it.

Some who have not been satisfied with their small stoves, may now perceive that their want of success, so far as plants are concerned, may be owing to a horizontal-pipe being too long, to the pipe proceeding from the top of the stove becoming too hot, or to the fire-box abutting at once against the sides of the stove and making them almost red hot, which is very destructive to vegetable life, the air being burned and deprived of its moisture and oxygen. For all such iron stoves, broken coke is a good fuel. It is less injurious to pipes, &c., than coal. Cast metal makes the best chimneys. Plate iron is expensive and soon corrodes and wears out.

In the boisterous morning of Friday, when the dry snow was finding its way into the house through every little cranny, the stove, with the consumption of less than a peck of coke, soon raised the general temperature of this 75-feet house to 60°; then the pipe-chimney, which has 7 feet of its length inside the house, was pretty warm; but on the draught being stopped by putting the ashpit-box close in, and leaving only two of the one-eighth-of-an-inch slits open, the upper end of the pipe-chimney gradually cooled, whilst the heat of the stove long remained uniform. The open space all round the firebox renders the bottom of the stove outside almost as warm as the top. We would wish to impress on all who contemplate an iron stove for their little houses, to rest assured that a moderately large one will be truer economy in the end than a small one, and to think seriously of the importance of having the firebox free of the outside of the stove. If the small openings for air are properly managed there is no need of a damper.

We have not yet had the management of one of Hays's stoves, though from what we know of stoves we feel sure they will be very useful, especially with a small pipe to take off the gases, but two things are against them, the price of the fuel and the difficulty as yet involved in obtaining it only in London. For all purposes where only a temperate genial heat is required there is no mode of heating that in economy of fuel will equal that of stoves placed inside a house. When we mentioned 60° above, that was only to satisfy ourselves what could be done quickly in a stormy day. Stoves, if of iron, are best used when the fire heat in the house should only range from 45° to 55° in mild weather, and 5° less in severe weather. With iron stoves large enough, or brick stoves, which are less easily made dangerously hot, much may be done in economical gardening in houses cheaply enclosed with glass.

Iron stoves are better for small greenhouses than brick stoves in respect to the ease with which they can be moved out in summer. One complaint against them is that the sheet-iron pipes generally used so soon wear out. Cast metal cleaned at times would last a lifetime. A reducing elbow to fit into the stove, and the upright pipe fitted into it with cement or good mortar, could be taken out at any time. The over-heating is the chief evil to be guarded against. Where such care and such large stoves cannot well be used, it would be well to surround the stove with a water jacket.

Boilers.—Some time ago we alluded to the waggon saddle-back boiler, one of the peculiarities of which is that there is a pipe at the bottom connecting the two sides at the farther end, so that by one tap you can empty the boiler. A correspondent in praising the terminal saddle-back boiler (which, though we have not seen, we have no doubt is a good one, and so is every fair-sized saddle-back so far as burning all sorts of rubbish of fuel is concerned, if well set), took occasion to point out the defect of the property referred to in the waggon boiler, inasmuch as the pipe between the two sides would soon burn out. This may be the case, though it has not come to our notice. This cross pipe placed at the bottom would always be at the coolest part of the furnace, more especially as it would be beyond the fire bars, and, therefore, little liable to a knock from the poker. In some cases that we have seen this end pipe is also covered with a sloping fire lump, to give a quick draught round the sides of the boiler. Be this as it may, we think it of importance that by such means, or by the improved terminal boiler, or by having a tap at each side of the saddle-back, there should be an opportunity of emptying both sides of the boiler at times. We have had some experience in tinkering in a simple way the sides of saddle-backs, after they have been worn out in places, and we have uniformly found that they first gave way on that side where there was no tap, and if the boiler was so far gone as to compel removal, we as uniformly found a lot of mud collected at the bottom of that side. However clean the water used a sediment will form in time, and in many cases water is sometimes used for this purpose with less attention to its state than ought to be exercised.

Bursting of Boilers.—Since January, 1861, we have not heard of more boilers giving way than this season. When worn out by gradual decay we cannot speak properly of a boiler bursting; but such no doubt is the case when the failure of the boiler is attended with the throwing up of the brick setting, &c. There can be little question that in such a case steam has been generated. "How," says "Inquirer," "can steam be generated in a boiler kept regularly supplied with water?" How, we might ask, could air pass into such a boiler? How can it collect in pipes pretty constantly supplied with water? how become as firm and incompressible as iron or granite? It will be obtained from the water itself; it will find an entrance whenever from over-heat and expansion there is a loss of water, and even from contracting into less space as it cools. "Inquirer," however, supplies a sort of confirmation that in his case steam was the destructive agent. He says that "to produce heat enough the water in the pipes was boiling hot, the fire was very strong, and the boiler very hot." As the supply-cistern was very elevated and communicated with the top or nearly the top of the boiler, the pressure of the water and the great heat below the boiler would be very apt to cause air or steam to accumulate close to the iron of the boiler; and this iron, from the water not touching it, would become very hot, and when from a charge the water again came in contact with the over-heated sides of the boiler, steam would be so quickly formed that there must either be a rapid overflow of water or the boiler from the pressure must give way. When some of our correspondents told us, as in a late case, that the water was thrown out so fast from the supply-cistern that they had to keep almost constantly supplying it, and then could not keep it full; there was more than the increased bulk from the expansion of the water, and but for the running over, or boiling over rather, there would have been a bursting. The remedy is just as in the case of stoves; have enough of boiler and of piping that there may never be any necessity for having the water near the boiling point instead of beyond it.

Wrought Iron and Cast Metal Boilers.—Which are the better? inquire many—that is, which are the more lasting. This is a

matter we cannot decide. So far as our experience goes, the cast metal would carry the day. We know some very common cast metal boilers which have stood their work more than thirty years. We have seldom known a wrought iron saddle-back last much longer than sixteen years—fifteen years might be looked upon as a fair average; some may stand longer, and others go before that time. Our experience and observation point to cast iron as the most durable. As it is a matter of some importance, for there is generally much trouble when one gives way, we hope correspondents will give the results of their experience. We find, too, that, unlike some other of our servants, the more regularly they are worked the longer they will last, as a general rule, and hence the boiler for a greenhouse or a lean-to forcing-house will not last so long as one more constantly used.

The general work, potting, cutting-making, changing plants, and moving Strawberry pots, &c., has been so like that of previous weeks that we will defer particulars.—R. F.

COVENT GARDEN MARKET.—March 27.

With better weather we may expect some improvement in the tone of business; but at present there is nothing in the character of either supply or demand that merits particular remark. Continental supplies comprise Radishes, Lettuces, Endive, Artichokes, Tomatoes, and Kidney Beans, and reach us in good condition. Forced fruits of Pines and Strawberries may be had at rather lower prices.

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... each	0	6	to 0	8	Leeks ..... bunch	0	6	to 0	0
Asparagus .... bundle	8	0	12	0	Lettuce ..... per doz.	1	0	2	0
Beans, Kidney, per 100	2	0	3	0	Mushrooms .... pottle	2	0	3	0
Scarlet Run, ½ sieve	0	0	0	0	Mustd. & Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions.... per bushel	4	0	5	0
Broccoli ..... bundle	2	0	3	0	Parsley.....per sieve	6	0	8	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsnips ..... doz.	0	9	1	3
Cabbage ..... doz.	2	0	3	0	Peas..... per quart	0	0	0	0
Capsicums..... 100	0	0	0	0	Potatoes ..... bushel	4	0	6	0
Carrots..... bunch	0	6	0	8	Kidney ..... do.	5	0	6	6
Cauliflower ..... doz.	6	0	10	0	Radishes doz. bunches	0	9	1	0
Celery ..... bundle	2	0	3	0	Rhubarb ..... bundle	0	9	1	9
Cucumbers..... each	0	9	2	6	Savoys ..... doz.	3	0	4	0
pickling .... doz.	0	0	0	0	Sea-kale ..... basket	2	0	3	0
Endive ..... doz.	2	0	0	0	Shallots ..... lb.	0	8	0	0
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	5	0	0	0
Garlic ..... lb.	0	8	1	0	Tomatoes.... per doz.	4	0	0	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	6	0	0
Horseradish .. bundle	4	0	6	0	Vegetable Marrows dz.	0	0	0	0

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples .....½ sieve	2	0	to 3	0	Melons..... each	0	0	to 0	0
Apricots ..... doz	0	0	0	0	Nectarines ..... doz.	0	0	0	0
Cherries ..... lb.	0	0	0	0	Oranges 100	5	0	10	0
Chestnuts..... bush.	0	0	0	0	Peaches.....doz.	0	0	0	0
Currants..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	3	0	6	0
Black ..... do.	0	0	0	0	kitchen..... doz.	2	0	4	0
Figs ..... doz.	0	0	0	0	Pine Apples ..... lb.	6	0	10	0
Filberts.....lb.	0	0	0	0	Plums ..... ½ sieve	0	0	0	0
Cobs..... lb.	0	9	1	0	Quinces ..... doz.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Raspberries.....lb.	0	0	0	0
Grapes, Hothouse..lb.	12	0	25	0	Strawberries..... oz.	1	6	2	6
Lemons..... 100	5	0	10	0	Walnuts..... bush.	10	0	20	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

Books (*A Young Beginner*).—Thomson's book on Grape Vine culture is a good practical work. We know of no separate work on Melon culture. Mills on Cucumber culture is a good work. (*An Amateur*).—"The Vine Manual," a new edition just published, which you can have free by post from our office if you enclose thirty-two stamps with your address. (*A Bud*).—"Thompson's Gardener's Assistant" is an excellent work. You must have more practical knowledge before you can write for the instruction of others. (*M. S. D.*).—The want which you truly point out will be supplied at the close of the present year. The work is preparing. (*J. K.*).—You can have "The Modern Peach Pruner" free by post from our office if you enclose 3*s.* 8*d.* in stamps with your address. Berkeley's "British Mosses" is good. It contains twenty-four plates, and its price is one guinea.

Everlasting (*W.*).—The two flowers enclosed are different forms of Gnaphalium arenarium, or Sand Everlasting. "French Lavender" is Lavandula stæchas of botanists. It has been extensively grown not only for its fragrance but as a medicinal herb.

Temperature of Greenhouse (*Ignorance*).—Your question is far too indefinite for us to answer. If you enclose seven postage stamps with your address, and order "Greenhouses for the Many," you will have the book sent you free by post. It will give you probably information adapted to your wants.

Aucuba Japonica (*R. L.*).—If you place a male plant of Aucuba japonica by the side of the old variegated sort it will enable the latter to produce berries. Those plants which have borne berries this year will not continue to do so without the pollen of the male.

Granite Sand (*Mrs. C. Galloway*).—Fine granitic sand, such as you find on the banks of the Dee, if not soaked by sea water, is excellent for Ferns and Heaths. Even if impregnated with salt from the sea this may be removed by two or three washings in fresh water.

Grammars Potatoes.—Mr. Frederick Gill, of the Dorset Nurseries, Blandford, sold four hundred sacks of the sorts named by me for eating purposes, and has none left. This notice may stop fruitless applications, of which he has had many.—W. F. Radclyffe.

Sulphate of Lime as a Manure (*W. J. L. Farm*).—We are quite inclined to believe the statement of your friend, that his sugar plantations in the West Indies have produced much larger crops since he applied sulphate of lime (gypsum) to the soil. It is composed of forty-three parts sulphuric acid and thirty-three parts lime. It is a constituent of Lucerne, Saintfoin, Clover, and of many of the Graminæ, the Sugar Cane being one of them. It is also a constituent of Turnips, Potatoes, and Buckwheat, and to all these crops it has been applied advantageously. No more than four or five bushels per acre, sown by hand, are required. One farmer has recorded, that of Clover hay, his land manured with gypsum, produced three tons per acre, and the land un-gypsumed only one ton.

Zinc Cisterns as Flower-pots (*W. Nunn*).—As we observe that our Myrtles, Coronillas, Vines, Peaches, Nectarines, Apricots, Figs, &c., are becoming too large for their pots, we are tempted to envy you the possession of the fifty circular zinc cisterns, 16 inches in diameter, and the same in depth. Excellent pots, indeed, they would make to shift the above into next October, by first taking the precaution to bore in the sides of each, close to the bottom, three circular holes of about an inch in diameter, and in that case a central hole in the base may be dispensed with; the side holes are better for the exclusion of worms. The outside may be painted stone colour, and be made to resemble stone by sand being dashed on the paint whilst it is wet, or the appearance of terra cotta may be given by putting on a coating of red paint and dashing sifted brick-dust against it whilst the paint is wet.

Tricoloured Zonale Pelargoniums (*J. W.*).—Your tricolor Zonales are the finest of the kind we have ever seen. They have all a rich golden, well-defined margin, with a decided green centre. In Florence we have broad, distinct maroon zone, fringed with dark crimson; the leaf is large and very handsome. Aurora Borealis is a somewhat smaller leaf, and with a larger and paler green centre, a narrower zone, and its colour a mottled mixture of bright crimson and maroon, the maroon prevailing. Fanny is a smaller leaf still, with a small pale green centre and a broad very lively bright crimson zone, with a few mottles of pale maroon. Northern Star is much like Fanny, but with less maroon in the zone. Beauty of Huntreyde has a large green centre, with a pretty narrow zone of mottled crimson and maroon. Letty Wills is also a small leaf, the gold margin rather paler than in the others, and with somewhat of the same zone as Beauty of Huntroyde, but with a smaller centre.

Aspect of Greenhouse (*W. Bradford*).—The difference is so slight between a south-eastern and a south-western aspect that we should be guided in our choice by other considerations, such as appearance, facility of access, &c. If all these are matters of indifference, then give the preference to the south-western aspect.

Pollen of the Male Aucuba (*C. T. H.*).—Shake the pollen on to dry tissue paper, fold it up like a medical packet of powder, then put it into a wide-mouthed phial which has been well dried; cork it tightly whilst warm and keep in a dry place until required. The seedlings will come very various, both green and variegated.

Growing Potatoes on the Ridge and Furrow System (*J. Currie*).—Suppose that the ground has been half or bastard-trenched for a few weeks, and is lying quite even upon the surface—viz., the top spit and crumbs of the first trench, a yard broad, were cast or wheeled to where the ground is to be finished, in order to fill up the last trench. The bottom spit of the first trench, or subsoil, must then be broken up with a Parkes's steel fork and kept down; then fork the top spit of the next trench on to it, and cast out the crumbs clean with a shovel on to that, and so on, working in raw manure through the whole body of the soil only in the autumn. Now measure out the ground for the Potatoes, and strain a line across, row after row, to pegs where the rows are to be. Place the sets upon the surface of the soil at quite a foot distance for the earlier, and 18 inches at least, if the ground is good, for the late and larger-topping sorts. Then readjust the lines to the full width, or, what is better, rather wider than a shovel—say a foot, to mark out the trench centrally between the two rows of Potatoes. Cut down with a spade, and rather slanting inwards, to the full length of the lines, in order to leave the sides of the trench even, and to form as it were a rather pyramidal base to the ridge. Then dig, and cast out every other spadeful of earth, right and left, on the shoulders of the corresponding ridges, by which you avoid plumping the soil on the shoots of the sets in the centre, and leave that part hollow to become filled directly with part of the crumbs through the agency of the shovel, and cover the sets about 3 inches deep. In about a fortnight afterwards shovel the crumbs, or loose soil, clean from the trenches, which will fill up the centres of the ridges, and leave them about a foot broad, flat upon the top, and gently sloping at their sides, about 18 inches deep to the bottom of the trenches, and leave the Potato sets covered about 6 inches deep. Should a propitious season occur, and the crop be free from the disease, nothing further will be required, except picking off the blossoms of those which are disposed to berry, and clutching away any weeds which may be showing themselves too prominently till the Potatoes are ripe. Mr. Fish gives excellent advice for a light soil and open situation at page 183.—Upwards and Onwards.

Sulphur and Lime (*Inquirer*).—When these are boiled together in water they unite and form what chemists have named bi-sulphuret of calcium. Calcium is the metal which united to oxygen forms lime. The bi-sulphuret is fatal to insects and injurious to the leaves of plants.

Heliotrope Unhealthy (*A. H. J. L.*).—The plant, judging from the stem and leaves you enclosed has been seriously damaged by the syringing with the Gishurst solution. Your remedy will be to have the plant well syringed, and repeatedly, so as wash it off. The solution has been far too strong, and we do not perceive the reason for an application of Gishurst to a plant having, as this has, such a woolly leaf and stem. We would cut the plant in closely, or every shoot to within an inch or two of the old wood.

Forcing Lilies of Valley (*X. Y. Z.*).—Our practice is to take up those roots that have large plump crowns, and such only, potting them in a compost of rich turfy loam, and placing them in a house with a temperature of 40° to 45° for a fortnight, and afterwards until they bloom in a temperature of 50° to 55°, and not exceeding 60° at night, affording them a position near the glass and plenty of water. We never fail to have a plentiful supply of bloom; but we pot none other than the flowering roots, which is different from taking up patches from the borders, more than half of which are by far too small and weak to flower, and, indeed, have no flower-bud formed; for were you to cut a crown open you would see the bud, if any. Pot none but the large crowns, and put them in pots or pans at about an inch apart. The price of Keane's "Out-door Gardening" is 1*s.* 6*d.*, or free by post 2*d.* extra.

Moss on Lawn (*F. I. C.*).—It is hardly possible to free your lawn entirely from moss, nor do we think a little any great harm, but rather an advantage, as it is much pleasanter to walk upon. The chief causes of mossy lawns are a poor soil and its being undrained. We would recommend a dressing of rich soil or very rotten manure, first scratching the lawn with an iron rake, and then applying the salt at the rate of half a pound per square yard; finally dress with the compost, not covering deeper than a quarter of an inch. The first heavy rain will wash it in; when the ground is dry roll well, sowing previous to rolling 24 lbs. per acre of renovating lawn grass seeds.

Weeds on Walks (*Idem*).—If your walks have become dirty at the surface, which is a prolific source of grass and moss, we would advise their being now picked up and turned, giving them a sprinkling of fresh gravel. You will, if you roll well, have a splendid walk until half the summer is over, and by the time weeds are troublesome one dressing of salt will serve the whole season. 3 lbs. per square yard are required to destroy weeds on gravel walks effectually, and that quantity makes the surface so damp that it is by many objected to; and salt causes the gravel to wear much more quickly, and so encourages the growth of weeds: hence the prevailing opinion, weeds on walks come thicker after salting. The time to salt walks is when there are weeds; and its application will be necessary in April or May, and again in July or August, putting it on during dry weather, dependant, of course, on the season.

Planting Flower-bed (*Idem*).—Your proposed planting of a circular-bed by using Silver-edged Pelargonium, a double row for edging, then a double one of Stella, and filling the centre with Purple King Verbena or Perilla would not answer well. We would have the centre some silver-foliaged plant as Centaurea argentea, C. ragusina, or Cineraria maritima, the flowers being pinched off the variegated Pelargoniums. A very effective bed may be made by using Cerastium tomentosum, or C. Biebersteini as an edging, then Purple King Verbena, next yellow Calceolaria, filling in the centre with Perilla.

Pinching Show and Zonale Pelargoniums (*A Constant Reader*).—The Show ones may now be pinched if necessary, but not later if you wish them to flower at the end of June, and the Zonale not after the third week in April. It is better to retard than force them into bloom.

Insects in Old Tan (*A. B. A.*).—We presume the insects in the tan, over the dung hotbed, are some kind of mite that will do your plants or cuttings no harm, but disappear when air is given.

Viola cornuta from Seed (*Idem*).—There is no more art required in the raising of this plant from seed than that of any other of the Pansy family. We simply drain a pan well, fill it to the rim with a compost of sandy turfy loam two-thirds, and one-third leaf mould, and, making the surface smooth by patting it gently with the bottom of a flower-pot, sow the seed, and just cover it with fine soil. A gentle watering is then given, and the pan placed in a gentle heat, as that of a Cucumber-frame, or hotbed with a temperature of 65° or 70°, assiguing them a position near the glass. The plants come up well, but we have had failures through the seed being bad.

Tea-scented Roses in Greenhouse (*Idem*).—We advise the placing of all kinds of Roses out-doors in summer, as under glass they are subject to red spider; besides, they are benefited by a brief sojourn in pure air and refreshing rains. Put them out in June, and house in October.

Estimate of Coal for Heating Garden Structures (*Waste Not, Want Not*).—Yours is a very difficult question to answer, as the quality of the coal is a serious consideration, some kinds lasting half as long again as others. We presume you burn slack coal, and in that case, 1 ton per week for the summer, and 2 tons for the winter season would be a fair allowance, or 78 tons per annum, the cinders from the house being added thereto. The usual allowance for a gardener's cottage is 5 tons of best coal per annum, but the allowance varies; for instance, in the south 4 tons only, in the west 5 tons, whilst in the north 6 tons are allowed, and in many places where coal is cheap, there is no limit to the quantity.

Planting Potatoes (*Henry Bover*).—The soil being light the sets may be planted in drills deep enough to allow of these being level, earthing-up after they have been well hoed and cleaned. They will, no doubt, answer well, but if the soil be heavy, or wet, it is better to plant in ridges.

Linum flavum (*Idem*).—It is a perennial not flowering the same season as sown, unless sown and forwarded in heat.

A Yard of Netting (*A Beginner*).—When we order netting 2 yards wide, we expect it when one side is fastened to the top of a wall under the coping to hang down 6 feet, and if it do not we return it. A yard of netting is, when the two sides and ends are fastened, to cover 9 square feet, or 1 yard superficial, and to cover 10 yards square, 100 yards of netting only are required; but some allowance must be made for slack and elevation from the ground, which in the covering of fruit bushes to protect them from birds, very often take up more than double the netting necessary to cover the ground. Netting is usually sold by the lineal yard.

Netting for Doors of Orchard-house (*E. S.*).—We do not know of anything that could possibly be more light, airy, and elegant than Haythorn's hexagon netting for keeping out wasps and birds. This tacked to frames, providing the frames were hung to the posts with hinges, would not be inconvenient. It is advertised in our columns.

Seed Sowing (*Henry Bover*).—The plants you name may be sown and treated as you propose in a cool greenhouse with every prospect of success, only keep the soil moist, and when they are up give plenty of air and a position near the glass.

Ixora coccinea Leaves Browned (*A Common Cabbage*).—It is produced through moisture lodging on the leaves, the plants being kept in too low a temperature. If you were to give the plant the benefit of a hotbed of from 75° to 85°, and a top heat of 65° to 85°, with plenty of moisture, but not through syringing overhead, with a moderate amount of ventilation, and a position near the glass, we think the leaves would not brown.

Vines at Back of a Greenhouse (*H.*).—The Vines will never thrive so long as they are overshadowed by climbers, and the back of a greenhouse is no place for them. They should have a position on the roof. Allow but one shoot from a Vine, train it 15 inches from the glass, allowing it to grow until it reaches the limit of the space allotted to it, then stop it. The laterals should have their points taken out at the first leaf or joint, and again at the second, cutting them close to the cane at the commencement of October. Water well now, and again when necessary, keeping well watered until September, then diminish the supply, giving none after September. Syringe morning and evening up to August, but early in the morning, and let the foliage be dry, or give air before the sun shines powerfully upon them. You may top-dress them now with an inch or two of rich compost. Water will be required about once in every ten days—a thorough soaking.

Camellias for Market (*A Constant Reader*).—You will find none equal to the old Double White, or Alba plena, and Fimbriata, of the whites; Bealii (Leeana superba), and Chandleri of reds; Sacco nova and Augustina superba, of rose; and of the striped shaded sorts, Storyii, Jenny Lind, Madonna, and Sarah Frost.

Roses for Forcing (*Idem*).—The Tea-scented and Hybrid Perpetual are the best, a list of which you will find at page 157 of the present volume.

Old Plants of Tom Thumb Pelargoniums (*A Subscriber to the Journal*).—Your old plants may at once be placed in the hotbed, and when grown sufficiently take cuttings from them, but we fear they will not grow sufficiently, being now no more than alive, to furnish cuttings that will be available for the present season. You can raise cuttings of Verbenas in your hotbed, particulars for which, as also for Pelargonium cuttings, you will have read in last week's Journal.

Pruning Camellia Root (*A Constant Subscriber*).—It is not necessary to root-prune Camellias to keep them in small pots, as no plant will thrive longer in the same pot than Camellias. We say, Do not root-prune them, but you may remove most of the old soil, potting again in the same size of pot. If you were to give the Primulas more heat and moisture they would throw the truss well up above the foliage. All they require is more liberal treatment.

Genista not Flowering (*Idem*).—Afford a compost of turfy sandy loam, a cool airy situation in the greenhouse, and a position near the glass, with water, so as to keep the soil moist; it will assuredly flower, being the freest of flowering plants. Do not allow it to suffer for want of water, and, on the other hand, water only when necessary when the buds are swelling and the plant is in flower.

Melons to Ripen in August (*Wyeside*).—The easiest way to ripen Melons in the first fortnight of August in a pit with the help of manure heat is to have the manure sweetened, at least the upper portion of it, by the end of April; have the bed made and the soil in by the first week in May, and turn out strong plants, but young, in the soil as soon as warm. Let the plants be stopped as soon as they make the third rough leaf, and of the shoots that come from the axils of the leaf select two, nipping out all others. If your light is wide plant three plants singly and at equal distances; if narrow, say 3 feet, only two plants. Of the two shoots on each plant train one to the back and one to the front of the pit. Do not stop at all until the shoots are within a foot of the back and front, then nip out the point of the shoot. As the shoots are growing, every bud that appears at the axils of the leaves, which buds would be lengthened into shoots, should be neatly taken out with the point of a knife, until you reach to within 6 or 8 inches of the point of the shoot stopped as stated above. This will leave a number of buds near the end of the shoot that will lengthen into secondary shoots, and on these the fruit will generally show at the first or second joint, and they should be stopped at the joint above the fruit. Care should be taken to set the blossom, and to keep a warm, dry atmosphere at that time. By the above simple plan the pit will not be crowded with shoots, and there will be a good strength in the plants to set the fruit when it shows. A volume could scarcely say more definitely on the subject.

Flower Garden Plan (*Jos. S.*).—Your garden will look very well, and the central part at least will have all the openness of the lawn at Tingrith, alluded to last year. We like your proposed arrangements; but as you have the plants we think you would improve the whole by having a band of Cineraria maritima round No. 1 in centre. We would put a band of orange Calceolaria, fringed with Lobelia, round 6 and 7, Gazania round 8, and Cerastium round 4 and 5.

Cucumber for Ridge Growth—Fowls Trespassing (*A Constant Reader*).—The old Long Prickly is the best useful variety, either for growing in the open air or in a cold frame. If fowls creep through your thorn hedge have some galvanised wire netting placed all along the bottom of the hedge. If they fly over have similar netting fixed to supports along the top of the hedge. If the fowls continue to injure your garden after having given notice to their owners, you could recover compensation in the County Court.

Iris Kempferi.—"A. R." informs us that he has bloomed it for some years past; he will oblige us by stating whether he considers it a very distinct and desirable flower.

Tiffany (*Dolores*).—Apply to Messrs. J. Shaw & Co., 29, Oxford Street, Manchester.

Pears at Eighteen Guineas a Dozen (*Hyacinthus*).—The Pears you allude to, as shown at the fruiterers' in Covent Garden Market, are imported from France, where they are grown against a wall, very few allowed to be produced on the tree, and other modes adopted to promote grossness. The fruiterer called them Belle Angevine, but the true name is Uvedale's St. Germain.

Heating a Greenhouse (*H. J. S.*).—We conclude that the pipes heat the slates above them, but that the heat does not pass into your six-inch bed of tan and 4 inches of soil above that, so as to make it impossible to obtain more than from 60° to 65° of heat in your bed for propagating, &c. With such a heat in the bed, what is the heat in the house? because if much lower, still the bed will partake of the general temperature, unless you cover the bed with hand-lights, small frames, &c. If the slates become warm enough we have no doubt that the tan is the cause, not because it is too close or is at all inferior to cocoa-nut fibre, for in similar circumstances that would be the same, but because it becomes dry next the slates, and then refuses to conduct the heat. Before you try your perforated zinc, clear out the bed and place on the slates 2 inches of rough clinkers, rough cinders, and an inch of fine washed gravel, and on that the soil. Have some small drain-pipes standing upright in which you can pour water at pleasure to wet the clinkers and slate, and stop the opening to keep in the steam, and we shall be mistaken if you have not plenty of heat. Of course, if the pipes do not heat the slates it is either owing to the heat not being strong enough, the pipes not being close enough to the slates, or the chamber in which the pipes are contained not being close enough. That chamber should only have a few slit openings near the floor. Let us know.

Peaches, &c., in a Greenhouse (*An Inquirer*).—In your span-roofed house, with a pit on each side, you may grow Peaches, Cherries, and Figs admirably in pots, but the first two should have very little of the bottom heat. If for them chiefly, it would be as well, by means of openings, to let the bottom heat out into the atmosphere of the house, and then the Peach roots may be 5° or more warmer than the atmosphere. The use you can make of the pits afterwards depends on the earliness of the time at which you bring the Peaches in and the due ripening of the wood afterwards, and moving them out in a dull day, so as to give no sudden change at first. Then you might have Melons, Cucumbers, and other things in the same pits.

Flower Garden Plan (*Inquirer*).—We presume your plan is on gravel, or the paths between the beds will be too narrow. For a beginner your plan and proposed planting do you great credit; so far as the materials to be used are concerned, we can find no fault, and when all are in bloom it will look well. As a lasting group you will fail to have a continuous mass of bloom from using so many Stocks, Asters, Carnations, Pinks, Pansies, and Chrysanthemums, and there will be in some cases a defect in the respective heights—thus, Eschscholtzia tenuifolia would make a better edging to Phlox Drummondi than a centre to it, as the Phlox is much the taller growing. If your position is cold we doubt whether Portulacas will make a good edging to Verbenas, and they show little in dull weather. They flourish on a warm knoll. On the same principle we doubt if Acroclinium and Rhodanthe will make good edgings to Asters. Some of the Nemophilas and Silenes would be more sure; but it is well to try. The Rhodanthe, is beautiful in warm sheltered places.

Names of Plants (*M. Oakley*).—We cannot name plants from single leaves. (*A. B. C.*).—It is a Mammillaria, but the species cannot be identified from such a small specimen. (*A. W.*).—There are two forms of leaves on Retinispora leptoclada, and those you sent may be the young form; but we cannot be certain from such a fragment.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending March 26th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 20	29 744	29.609	43	27	39	39	N.E.	.00	Densely clouded; cloudy and cold; overcast.
Thurs. 21	29 816	29.644	44	30	39	39	N.E.	.28	Partially overcast; cold with dry air; fine at night.
Fri. .. 22	29.730	29.631	49	36	39	39	E.	.02	Heavy fall of snow; hazy; foggy at night.
Sat. .. 23	29.722	29.460	57	43	40	40	S.	.04	Uniformly overcast; rain; overcast at night.
Sun... 24	29.596	29.495	59	43	41	41	S.W.	.00	Fine; very fine; overcast.
Mon... 25	29.697	29.446	53	47	43	43	S.	.12	Cloudy; rain; fine at night.
Tues. . 26	29.397	29.335	57	40	45	43	S.W.	.00	Very boisterous; fine with low white clouds; very fine.
Mean	29.671	29.517	51.71	38.00	40.85	40.57	..	0.46	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

NOTES ON FANCY PIGEONS.—No. 7.

FORMER WRITERS ON THE SUBJECT—RECENT WRITERS.

DELAMER—EATON—BRENT.

After the publication of Windus (1802 and 1804), there was not, so far as I can learn, any special work published for many years on the subject of fancy Pigeons, or, rather, any worthy of mention. In books on poultry Pigeons were indeed mentioned briefly, and also in books on natural history, but rarely was more given than the names of the fancy birds. Windus, therefore, remained the authority on the Almond Tumbler and its short-faced brethren, and Daniel Girton sufficed for the general fancier; nor could it have been better, as each author was the best of his kind. Girton was frequently reprinted, and well-worn copies were lent from one to another by the humbler fanciers, and thus Pigeon knowledge by book was kept up. Years rolled on, and so things remained. Pigeon love in those præ-railway, and therefore home-keeping and home-enjoying days, was ardent, but the knowledge of the fancy was learned orally, or from the two books just named; but one thing is certain, that never were better birds bred than at the time to which I allude.

In 1851 appeared a well-got-up volume by Murray, entitled "The Dovecote and Aviary," by the author whose name stands first at the head of this paper. This writer was a scholar, a naturalist, and master of a very attractive style of writing—indeed, no one of equal literary powers had as yet handled the subject. The engravings of the book were not equal to the letter-press, being evidently the production of one who did not understand fancy Pigeons, and no one but a fancier can accurately and justly draw a fancy Pigeon. Very pleasantly indeed is "The Dovecote" written; free and picturesque was the pen of the author—more than that, the work was original to a great degree; but the writer was rather a scholar and naturalist than a fancier, indeed he laughs at what he calls "the ultra fancier." Thus he says, "And now for the Tumblers, the prettiest of the pretty. In approaching them one had need have more courage than Master Slender in the presence of sweet Anne Page; for the dealers and ultra fanciers are standing by, like so many duennas and chaperons over a supposed veritable heiress. But give me in its unsophisticated and vulgarly bred state the pretty little Tumbler." And elsewhere he speaks of the Almond and other high-class Tumblers as "the much-valued specimens of hereditary deformity, with spherical heads and no beak." Now this is too bad, for high-class fancy Pigeons are to common-bred birds what florists' flowers are to ordinary flowers of the same kind—far superior, and advanced by care and pains to a higher state of beauty. Indeed "ultra fancier" there cannot be any more than an ultra florist; each is only a striver after greater excellence, and produces a higher class of beauty.

The author of "The Dovecote" makes a mistake concerning Kite Tumblers which needs correction. They are not, as he says, "those Tumblers which are self or whole-coloured—*i. e.*, all black or all cinnamon," but black birds with a strong glow of red in their flight feathers, and they are bred from Almonds, which latter—hear it not, ye short-faced fanciers—he calls "dirt-coloured when seen from any distance." The author of "The Dovecote" does not appear to have ever seen Moore's "Columbarium," as he speaks of "the excellent treatise on Pigeons attributed to Dr. Moore, from which subsequent pamphlets have taken so much without acknowledgment." He had, however, seen Girton's book, which he quotes, and specially and rightly states is "without date."

By the way, I may remark that I have learned a little more concerning Girton since reviewing his book. The Catalogue of the British Museum assigns to it the date of 1800, but a mark of doubt (?) is added. The compiler of the catalogue was right as to his doubt. Alexander Hogg was the publisher of Girton, and he was also a noted printer of books sold in numbers; he published a family Bible with illustrations by Benjamin West, who came to England from America in search of employment in 1763, and worked for the printers, for he was then unknown to fame, and continued to be until George III. smiled upon him. Now, putting this fact and the appearance of my copy of Girton together, and that Girton is referred to by Moore and mentioned also by name in the Treatise, I have little doubt as to placing his date at from 1765 to 1770.

While mentioning Girton for the last time, I cannot refrain from quoting a pleasant notice of his work in that marvellous

production of an omnivorous reader, "The Doctor," by R. Southey. In the one-volume edition, page 350, in a chapter entitled "Facts and Observations Relating to Onomatology or Names," Southey, after speaking of the different names of gooseberries, apples, pears, &c., goes on to say, "Hath not Daniel Girton, of Bucks, in his 'Complete Pigeon Fancyer,' wherein he points out to the gentlemen of the fancy the foul marks and real perfections of every valuable species of fancy birds and Toys which in his time were bred in England, France, and Holland: hath not Daniel Girton I say (though Boswell thought that a sentence so formed as to require an 'I say' to keep it together resembled a pair of ill-mended breeches, and candidly acknowledged the resemblance in his own—the sentence I mean he was penning, not the breeches he wore). Hath not Daniel Girton, I say, particularly enumerated in his title-page among the varieties of such fancy birds 'Pouters, Carriers, Horsemen, Dragons, Croppers, Uplopers, Pouting Horsemen, Fantails, Chinese Pigeons, Lace Pigeons, Tumblers, Runts, Spots, Laughers, Trumpeters, Jacobins, Capuchins, Nuns, Shakers, Helmets, Ruffs, Finikins, Turners, Barbs, Mahomets, Turbits, Owls, Smiters?' concluding the imperfect enumeration with an '&c.'" N.B.—Southey must have possessed a copy of Girton, and written with it before him, as the order of the names is exactly as given in the title-page of "The Complete Pigeon Fancyer."

Returning to "The Dovecote," the author of which was a Pigeon lover rather than a Pigeon fancier, and who for real fancier knowledge frequently quotes the older writers; still we may be glad that such an original work was written by one gifted with a charmingly descriptive style, who raised the taste for Pigeons, and proved that these beautiful birds, despised too frequently by the naturalist and the gentleman, need not necessarily be associated with the lower orders of society. It is said that in olden times every fourth Dutchman was a Pigeon fancier; perhaps something of this kind may yet take place in England. Every one needs a hobby, and what prettier things can be found to constitute one than fancy Pigeons? In "The Dovecote," now I believe out of print, we find the first mention of the Archangel Pigeon. An abridgement of the work containing the more practical portions has been published by Routledge in his series of "Books for the Country." It forms the first part of the volume entitled "Pigeons and Rabbits," by E. S. Delamer.

I now turn to one of the curiosities of literature, "The Treatise on Fancy Pigeons" by J. M. Eaton, and bearing the date of 1858. This edition includes his book on the Almond Tumbler, first published in 1851. I have called it a curiosity in literature, and indeed it is—so strangely written, so wandering, so odd; sometimes we laugh with the author, more frequently we laugh at him. He is a most enthusiastic Pigeon fancier, going far beyond the bounds of ordinary enthusiasm; then he mixes all sorts of things in his book; yet, though style, manner, and matter are often of the queerest description, no one can doubt the thorough knowledge which the writer possesses of his subject. The coloured illustrations by Wolstenholme are most excellent—the poor birds at length had full pictorial justice done to them. The same may also be said of the twelve large coloured portraits of perfect Pigeons (alas! where are the realities?) life size, published also by Mr. Eaton. I shall never forget the delight of an old fancier to whom I showed the pictures in Mr Eaton's book, and who had always deplored the ugliness of Pigeon pictures and their want of truth both to nature and fancy.

The plan of Mr. Eaton's book is this:—He publishes Moore's work with notes by himself and others, some notes excellent, some extremely funny. Thus he brings the fancy down to the present time. Then is added as a second part "The Almond Tumbler," which is in fact, as I have before stated, the work of Windus with additions, some acute and sensible, others in the odd vein. Manifestly the writer had but few early educational advantages, and therefore I forbear to make extracts or further to criticise. A better-arranged edition much condensed, as the writer himself seems to think, would be an improvement, as also omitting the coarse parts and expressions, now printed in full from the older works, but which a modern and better taste decidedly disapproves.

And now I come to the last-published and the best book on fancy Pigeons—"The Pigeon Book," by B. P. Brent, a name respected in these columns; for who, being a Pigeon fancier, has not profited by our deceased fellow contributor's clearly expressed and sound advice? It may at once be said that Mr. Brent did not hold the picturesque pen of the author of "The Dovecote," that he did not write what all would read for amusement, but that he strictly wrote to give information, and he gave it in plain words; and his work is by far the most complete on the Pigeon subject generally, a work to which to appeal and refer. This book forms the fourth original one on the subject—"The Columbarium;" then that of Windus; then "The Dovecote;" and, lastly, "The Pigeon Book;" but both the second and third must yield the palm to the additional information given by Mr. Brent. His residence on the Continent caused him to be able to introduce to the English reader a great number of German and French Toy Pigeons, which had never been previously noticed. Among these were Carmelites, Suabians, Hyacinths, Porcelains, Swiss, Stomachers, Priests, Sea Swallows, &c.

Mr. Brent arranges Fancy Pigeons very sensibly, in one division taking in all birds having certain strongly defined points or properties, such as Carriers, Tumblers, Pouters, Jacobins, &c., and then in a second division, he comprehends those Pigeons which are mere birds of feather, in which shape is little or nothing; and this property, feather, once lost they become only common Pigeons. In this class he places Suabians, Priests, Shields, and the general mass of German Toys. In addition to much useful information concerning management, feeding, &c., Mr. Brent was the first to arrange a prize list, placing the original colour of each variety first, and then also giving the particular fancy points of each breed, thus being a guide to purchasers, owners, and judges. Whoever wants good sense and correct guidance on the Pigeon subject, let him turn to the pages of Brent.

I have now traced fancy Pigeon literature from the first known English writer to the last, and as far as I know I have not omitted to notice one worthy of remark. I shall now turn to my own connection and experience with fancy Pigeons. It is an old love, and from which I have never even desired to be off.—Wiltshire Rector.

CROSSES IN DARK BRAHMA POOTRAS.

Having never had any communication with Miss E. Watts, I was much gratified to read her remarks last week on Brahma combs, and to see so entirely independent a corroboration of my opinion that the shapeless combs we now so often see were derived "primarily from the various crosses which have been attempted with the idea of improving the breed, and since perpetuated by want of care." The only two of such crosses which now demand special notice are those with the Cochin and Dorking, both of which linger unsuspected in many Brahma strains, and a few words may not be useless with regard to their detection.

I should, however, premise in explanation that I am no opponent of judicious crossing; I have a strong opinion that by scientific experiment in this direction, with subsequent careful selection, we might obtain a fowl with all the size, hardiness, and unequalled laying qualities of my favourite breed, combined with the edible excellence of the Dorking; but such would be a new fowl, and should be shown as such. And if I admit, also, that many existing breeds have been greatly improved by a cross, I contend that in such cases all traces of the cross should be thoroughly eradicated before the fowls are shown in their old name. For instance, if it be true, as I believe, that Dorkings were raised to their present standard of size by a cross with the Cochin, and with great advantage to their constitution, it is equally true that every trace of the cross but size is effectually gone. Such is not the case with the crosses I am now considering in the Brahmas.

The cross with the Grey Dorking has arisen from two motives—the one being a desire to improve the form and table qualities of the breed, and the other to give that indispensable requisite in a prize pullet—a dark breast. One well-known yard, which, of course, I cannot name, has specially sinned in this latter respect. Yet, whilst I know that the obtaining a darkly pencilled breast has often been the motive of a Dorking cross, I cannot agree with Miss Watts in her inference that all the darkest birds are thus tainted; for Mr. Teebay was a most inveterate antagonist to any Dorking taint in a Brahma, whilst the hens he used to show were even darker than any we see now.

The Dorking taint shows itself in several ways. A large, coarse, cruel-looking head is one pretty certain sign, which is seldom absent. White-legged pullets will also appear from time to time in every yard thus contaminated, and such legs are an

infallible sign of Dorking blood, though, of course, not to be looked for in most of the birds. There will also be, in all probability, a great want of the characteristic "cushion," causing a long back, and the "fluff" will be more scanty than in pure-bred birds; and lastly, whilst the pencilling on the breasts of pure-bred Brahma pullets assumes the form of more or less perfect semicircles, one within the other, the markings on the breast of a crossed bird often appear in the shape of straight streaks or lines in a downward direction, more or less mingled with the concentric Brahma pencilling. A red colour will likewise be usually discernible, but is by no means decisive, as it will also occur in quite pure-bred birds. The cruel head is the best sign, as it is the last to quit: and did I know, in fact, that there had been a Dorking taint in a yard, and found the heads of the pullets small, taper, and gentle in expression, with good combs, I should regard the strain as effectually "bred out" or eradicated. The faults in shape and colour are less decisive, and will vary with the amount of alien blood, but a white leg is absolute proof. The centre division of the comb will also, in all probability, be thick and blunted, and the whole comb in the hens be too large and thick, even more in proportion than is seen in the male birds, which also, however, will nearly always have combs much too large and fleshy, and with the characteristic triple character much obscured.

Scantily-feathered shanks will likewise be very often found in Dorking-crossed Brahmas, and are frequently owing in reality to this cause when attributed to a fear of vulture hocks. Single birds scantily feathered will occur in any yard, and if very good in other respects, may find their way to the show-pen; but where I have seen whole pens of scantily-feathered birds, I have rarely failed to discover other traces of impurity in the strain.

The Cochin cross I believe to have likewise arisen from two causes; the first being the original scarcity of breeding-stock, which led to crossing with the nearest-allied race in order to increase the produce as quickly as possible; the second being a desire to increase the size of degenerate strains. The first motive needs no condemnation; of the second I will only say that the expedient is totally useless, as a well-bred Brahma cock that has been properly reared is both larger and heavier than any Cochin that ever was seen. In some cases, also, a cross with the Partridge variety of Cochins has been employed to give more pencilling to the breasts of the pullets.

This cross is difficult to detect in specimens picked out for exhibition, but greatly mars the beauty of the general produce in the yard. A narrow and deficient breast will, however, be often apparent, and is an almost infallible sign, though, of course, ill-shaped birds will occur in all strains. There is also usually more yellow on the breasts of the pullets, or brown in the case of the Partridge cross; but this also is not a sure test, as I knew of two splendid hens, bred from some of Mr. Boyle's best birds, which had very stained breasts, and yet bred chickens again of the first quality. The comb will, however, be always more or less faulty, being, although generally triple in character, much too high on the head of the cock, and trembling with every movement of the bird. Most, in fact, of the large, loose, trembling combs we often see arise, in my opinion, from a Cochin stain. The cock will also very often have perceptibly red feathers about the hocks, and the hen about her shoulders; and in these places a red colour is nearly conclusive, though, as already observed, it is by no means infallible when about the breast. Nearly all Cochin-crossed hens, however, acquire a great deal of red somewhere in their second moult, though they may as pullets have been good in colour.

Another sign of a Cochin stain is a frequent tendency to incubation. I would not insist on this in the case of a single bird, though I have never myself had a Brahma which showed any desire to sit until she had laid at least thirty eggs, and generally more; but when the propensity occurred generally in a yard I should regard it as conclusive of a cross with the Shanghae, though perhaps generations back.

It will be seen that scarcely any one sign is infallible in either case, and to determine the question of a suspected cross requires much judgment and careful comparison of different points. Other experienced breeders may see further signs, and if so, I shall feel glad to have them pointed out, for my own benefit and that of other readers.

It will be seen, also, that I am little likely to agree with "An Old Dorking Cock," who attributes Brahmas to a cross between Dorkings and Cochins! I have shown how characteristic is the slightest taint of either breed; and his opinion will never be shared by any one who has actually bred for three successive years either a Cochin or a Brahma. Into the vexed question of their real origin this is not the place to enter; though I may yet have a friendly nut to crack with him on the comparative merits of the fowl Miss Watts justly calls, "About the best we have ever had."—Nemo.

SALT FOR POULTRY.

In answer to a correspondent, you stated that salt was considered injurious to fowls. Can any of your readers give any reliable information on this matter? I have been in the habit of mixing large quantities of table salt in the food of my fowls, but whether it has done harm or good I cannot tell.

I believe the general impression is, that salt is actually necessary to animal life, so that I cannot understand how it can be injurious to poultry.—E. S.

[The work you quoted is no authority. It is quite certain that though salt is beneficial to many animals, it is not essential for the preservation of health in all. We shall be glad of a reply from any one who has given salt to fowls.—Eds.]

BREEDING GAME FOWLS.

(*Concluded from page* 201.)

When crossing colours, in breeding in the following cases, the hens will prevail more than the cock:—1st, When there are more than six hens to each cock. 2nd, When the hens are dark with dark legs, and the cock light. 3rd, When the hens are full grown and the cock not full grown. Also, in breeding from Game hens with a barndoor cock, the progeny will be "Gamer" than if breeding from a Game cock with barndoor hens. The fighting properties are, however, inherited more directly from the cock than from the hens in breeding Game fowls together, which made the best breeders for the pit in general more careful of their best brood cocks than of their brood hens. In all animals of both sexes, those taking most after their sires are considered to be both the strongest and the most spirited—as a rule.

Breeding from fowls not full grown is a great mistake, as even if they produce quicker birds, which some say, though contrary to my own experience, they at any rate produce weaker, and smaller, and softer birds in both flesh and bone.

In crossing light and dark colours together, it is well known in all animals that the darker colours must gradually prevail and eventually absorb the lighter colours, and that the only way to prevent or retard this is, to keep most of the males of the lighter colours, or to have all strong vigorous males of the lighter colours. Dark-coloured animals are generally the strongest, Dark Brown or Dark Grey birds more especially so. In changing brood cocks in crossing from Brown Red to Black-breasted Red; for instance, it will alter the tinge of colour in the eggs of the hens, the Brown Red cock inclining them to lay a white egg, while the red-eyed Black-breasted Red cock will make the eggs of a pinkish tinge, though not so much so with Brown Red hens. A yellow or daw-eyed brood cock will cause yellowish-tinged eggs in like manner. If the brood cock does not influence all qualities, he is never a first-rate bird. Some say the cock influences colour and the hen shape, others that all external qualities are from the cock, and all internal qualities from the hen. I am certain that good cocks influence all properties, more in all respects than the hens ever do.

The immense difference between spring-hatched chickens and summer-hatched chickens, even though from the same parents, is worthy of remark. Those hatched in the spring (the proper time), running the right height on the leg, light and hard in flesh, with the right amount of bone; while those hatched in June or July run low on the leg, heavy and soft in flesh, and too small and weak in bone, and, therefore, if such were matched to fight against birds bred at the right season, they would have to fight with much longer-reached and stronger and harder birds, though not at all heavier than themselves, and would, consequently, be easily beaten, even if equal in blood. I may here mention that I have had good broods in June and July, though not equal to the spring birds.

Breeders for the pit generally allow three hens to a "stag" in breeding, and five hens to a full-grown cock. Some, however, prefer only two hens to the full-grown cock, or even one favourite hen to the favourite cock, only one hen is not enough; but two good hens are sufficient for the best cock, and I am convinced that the best Game chickens are bred

from two first-rate hens put to a first-rate full-grown cock in a good grass run.

It should be recollected in breeding Game fowls that the relationship as to blood stands as follows—viz.:—

1st, Brown Reds, Dark Birchens, Dark Greys, and the dark or gipsy-faced Blacks are all closely allied in blood, and are all dark-combed or dark-faced birds, and all from one origin, that of the Brown Reds, which is their original colour.

2nd, That all the red-eyed breeds are closely related, all originating from red-eyed Black-breasted Reds, and red-eyed Gingers.

3rd, That all yellow or daw-eyed breeds and strains are closely allied in blood of whatever colour, they are all springing from the yellow-eyed Gingers originally.

The colours of the eyes are not sufficiently looked to by most breeders, who do not seem to be aware that this is the very best criterion of the difference in blood of all. No good cross can result from breeding different colours of eyes together, too much difference existing for the blood to amalgamate properly, as may be seen on trial for experiment.—NEWMARKET.

BRINDLEY'S INCUBATOR.

I HAVE no wish to enter into a controversy with Col. Stuart Wortley about the supposed merits of his new incubator or the supposed demerits of my own; but in justification of my previous remarks in the Journal, perhaps you will allow me space to quote from a letter which I have to-day received from St. John Coventry, Esq., to whom I supplied an incubator some six or seven weeks ago. I could adduce further letters, but this one shall suffice.—JOHN BRINDLEY.

"Mr. St. John Coventry is glad to say he finds the incubator work perfectly, only requiring a little attention, and less as one understands the working of the machine. The last few days have been a very trying time for incubators, the thermometer varying from 30° to 50°; and by a very little management of lamp, &c., he has kept his incubator at 100°, not varying during this changeable weather 2°.—*Wimborne, March 25th.*"

DARK BRAHMA POOTRAS.

As I was one of the earliest breeders of these excellent fowls, and one who in the early days of their recognition in our prize lists, exhibited constantly, and, as the records of your valuable paper will show, with pretty fair average success, I wish to make a few remarks upon the question of colour. I am aware that my views will be attacked, as they are diametrically opposed to those of "NEMO," "Y. B. A. Z.," and all of the writers on this subject; but I am quite sure that these are all wrong in advocating the dark breasts of pullets, and the black breasts and thighs of cocks; and how Mr. Lacy and his supporters can contend that brown is the proper ground colour, I am at a loss to conceive.

I forget the year of the Anerley Show, but I was a young and a very successful exhibitor at that place; I do not think I exhibited Brahmas, but one of the best breeders at that time complained of the decision of the Judge, and thought his Brahmas the best ever exhibited. Mr. Hewitt was the Judge, and he called myself and several others round him, showed us some feathers pulled from the breasts of the disappointed exhibitor's birds, laid them on a white sheet of paper, and said, "Why, they are almost as brown as a Cochin's! It is useless to show birds with any strain of brown in the ground colour, and I have, of course, passed them over." I mention this to show that in our early days we aimed at a beautiful silvery-grey hue, and in all my early pullets I am glad to say I still continue it. After the first moult, however, they gradually become browner; I, therefore, persist in saying, the breast of pullets should be a light silvery grey, thoroughly and delicately pencilled with black, and rising almost to white in the throat. If our breeders would aim at this, and not at obtaining dark-pencilled breasts, they would not be so apt to get brown patches on the wings of the cockerels. I also think it desirable to have a well-spangled breast on a jet black ground for the cock in preference to a full black breast.

I am confident that the brown shade has been imported into the Brahmas during the last few years by an attempt to cross with a Partridge Cochin. I, therefore, mean to adhere to my original strain, and I feel sure breeders will continue to come to me, as they do now, for my birds, as they find they are losing that silvery-white ground colour which all of us who were the original breeders so long struggled for. I am aware I have been sometimes beaten this season because of my strong prejudices as to colour, but I feel confident that in the end I shall prove to be right. I seldom trespass on your columns, but this question now assumes some importance, and now that I have had my say, I shall not trouble you on the subject again.—J. K. FOWLER, *Prebendal Farm, Aylesbury.*

HATCHING BY AN INCUBATOR.

A FRIEND of my mine last year had an incubator which proved quite unsuccessful, independently of its causing great loss of time and annoyance by its non-success. Probably he might have failed to carry out all the instructions, though I am fully aware he did his best to adhere to them. I should feel obliged if some of your numerous readers would give detailed accounts of incubators where their use has been attended with success, and answer the following questions:—

1, Will the dry heat from an incubator prove as beneficial as natural means?

2, Are the chickens when hatched by this artificial means as strong in constitution and as sound in feather as those hatched by natural means?

3, Do those birds hatched by incubators—viz., Hamburghs, Polands, and Game, whose chief merits depend upon correct colour of feather when adults, display the same feathering as when natural means have been employed?—TUDOR.

MELROSE POULTRY SHOW.

THIS Show, held in Melrose Corn Exchange on the 21st and 22nd inst., was most successful in every respect, there being nearly 250 entries, and the hall of the Exchange, was on both days crowded with visitors.

DORKINGS.—First, T. L. Jackson, Bush Ewes. Second, Lord Binning, Mellerstain, Kelso. Third, J. White, Warlaby, Northallerton, Yorkshire. Highly Commended, T. Raines, Bridgehaugh, Stirling. Commended, Countess de Flahault; Lord Binning.

SPANISH.—First, J. Thresh, Bradford, Yorkshire. Second, Master A. Redpath, Edinburgh. Highly Commended, W. Paterson, Langholm. Commended, D. Waugh, Melrose.

COCHIN-CHINA.—First, E. A. Aglionby, Esthwaite Lodge, Hawkshead. Second, W. R. Park, Abbotsmeadow. Highly Commended, E. A. Aglionby. Commended, Mrs. Dickens, Cornhill; Mrs. Waugh, Castlehill, Lochmaben.

BRAHMA POOTRAS.—First, D. Annan, Torr of Moonzie, Fife. Second, E. A. Aglionby. Highly Commended, Mrs. Waugh; C. Pease, Southend, Darlington.

GAME.—First, Lord Binning. Second, D. Gellatley, Meigle. Highly Commended, W. Riddell, Newton, St. Boswells; J. Brough, Carlisle; W. Tait, Heatherlie, Selkirk; Lord Binning; W. Easton, Canongate, Jedburgh; J. J. Wilson, Darlington; W. Mahon, Jedburgh. Commended, W. Easton.

HAMBURGHS (Pencilled).—First, H. Pickles, jun., Earby, near Skipton. Second, W. R. Park. Highly Commended, T. J. Harrison, Singleton Park, Kendal. Commended, P. T. Paterson, Langholm; T. J. Harrison; G. Walker, Selkirk; W. Smith, Ainderby Steeple, Northallerton; T. Musgrave, Longtown.

HAMBURGHS (Spangled).—First, H. Pickles, jun. Second, R. Dickson, Selkirk. Highly Commended, Messrs. S. & R. Ashton, Mottram, near Manchester. Commended, Mrs. Blacklock.

ANY OTHER VARIETY.—First and Second, Countess de Flahault (La Flèche, and Crève Cœur). Highly Commended, W. R. Park (Crève Cœur); J. Hastie Commended, W. R. Park (Silver Poland); Lord Binning (Scotch Grey).

BANTAMS (Any variety).—First, W. Mahon. Second, T. C. Harrison, Hull. Highly Commended, R. D. Johnstone; P. A. Renwick, Kelso; Messrs. S. and R. Ashton; W. Mahon; D. Broomfield, Kelso. Commended, W. Easton, Jedburgh; F. L. Roy; W. Scott, Jedburgh.

SWEEPSTAKE FOR BANTAM COCK (Any variety). — First, W. Brown, Selkirk (Black Red Game). Second, Countess de Flahault (Black Red Game). Highly Commended, T. Raines (Game); W. Scott, Castlegate, Jedburgh (Black Red Game).

DUCKS (Aylesbury).—First, A. Haggart, Leslie, Fife. Second, Lord Binning. Highly Commended, J. A. S. E. Fair, Gilliestongues, Jedburgh. Commended, T. Paterson, jun.

DUCKS (Any other variety).—First and Second, T. C. Harrison, Hull (Mandarin, and Carolina). Highly Commended, A. Thomson, Mainhill, (Muscovy).

SELLING CLASS.—First, J. M'Millan, Jedburgh (Manorkies). Second, T. R. Paterson, Langholm (Golden-pencilled). Highly Commended, J. A. S. E. Fair (Black Red Game); T. L. Jackson (Dorking); J. Musgrave (Silver-pencilled. Commended, J. Harvey (Duckwing Bantams); T. Musgrave (Golden-Hamburgh); F. L. Roy (Game Bantams); R. Burrow, Longtown, Cumberland (Golden-pencilled); J. Dickinson.

PIGEONS.

FANTAILS.—First, H. Yardley, Market Hall, Birmingham. Second, W. R. Park. Highly Commended, H. Yardley; W. R. Park; T. C. Taylor, Marton Lane, Middlesbro-on-Tees. Commended, J. M. Watson, Gattonside.

POUTERS.—First, H. Yardley. Second, R. Paterson, Melrose.

NUNS.—First and Second, R. Paterson. Commended, P. A. Renwick, Kelso; W. R Park.

JACOBINS.—First, R. Paterson. Second, J. Gray, jun., Melrose. Highly Commended, Countess de Flahault; R. Paterson; T. Moffat, Newtown; P. A. Renwick; J. Gray, jun.; R. More, Melrose; H. Yardley; T. Turn-

bull, Whitrigg; J. Shiel, jun., Darnick; T. C. Taylor; J. Campbell, Distillery, Langholm.

Turbits.—First, Miss Crosbie, Gattonside. Second, W. R. Park. Highly Commended, T. Turnbull. Commended, W. R. Park.

Owls.—First, J. Fielding, jun., Rochdale. Second, H. Yardley. Highly Commended, J. Fielding. Commended, Miss Crosbie.

Tumblers.—First and Second, P. A. Renwick. Highly Commended, R. Paterson; H. Yardley; R. Irving, Langholm.

Any other Variety.—First, H. Yardley. Second, J. Campbell. Highly Commended, R. Paterson; P. A. Renwick; J. J. Wilson.

Selling Class.—First, Messrs. S. & R. Ashton (Barbs). Second, H. Yardley. Highly Commended, R. Paterson (Fantails, and Dragons). Commended, R. Paterson (Red Barbs); W. R. Park (Fantails); Miss Crosbie (Turbits); Miss M. Scoon, Melrose (Turtle Doves); T. C. Taylor (Carriers). H. Yardley, Pigeon Medal. Lord Binning, Countess of Flahault, H. Pickles, jun., all equal for poultry medal.

CANARIES.

Buff Don.—*Cock.*—First, J. Kemp, Galashiels. Second, J. Trotter, Melrose. *Hen.*—First, J. Kemp. Second, W. Bogie, Melrose.

Buff Flecked.—*Cock.*—First, J. Kemp. Second, R. Laurie. Highly Commended, J. Fairbairn, Melrose. *Hen.*—Second, J. Kemp.

Cage Bird (Any breed).—First, W. Bogie (Yellow Don Cock). Second, R. Laurie.

Judges.—*Poultry* and *Pigeons:* Mr. Dixon, Bradford; *Canaries:* Mr. R. Ballantyne, Hawick.

LAPWINGS, OR GREEN PLOVERS.

As I know there are numbers of the readers of The Journal of Horticulture who feel quite as great an interest in the keeping of unusual pets as of poultry, I cannot refrain from bringing before their notice domesticated Lapwings, as being not only a most interesting, but also in walled gardens a most serviceable "hobby."

The difficulty of getting young unfeathered Lapwings to live is always a serious drawback, as by far the greater proportion of them die within a few days of being taken, the newly-caught adult birds are, on the contrary, exceedingly easy to keep, and very speedily become almost as tame and docile as though they had been reared by hand; in fact, I myself purchased a few from Mr. Harrison, of Spalding, only a few weeks ago, that are now so familiar as to come directly to be fed the moment they hear the voice of the person who usually attends to them.

That Plovers must be exceedingly beneficial when running in a walled garden is evident on the most cursory inspection, for though they do not appear to take any notice whatever of growing produce, no worm, snail, or beetle ever escapes them, and being thus constantly on the look out for these destructives, whilst the birds themselves are so light and graceful of carriage as to do but little damage to crops, they speedily become the useful favourites I have represented. They will eat sopped-bread, corn, and small scraps of uncooked meat with avidity, and I find even boiled broken potatoes appear to them but little less palatable. A good feature is, that not being able to perch, if properly pinioned or even cut-winged, their escape from walled premises is impossible, whilst to spectators they appear as if still enjoying unrestrained liberty. The beauty of their plumage is no slight additional recommendation.—Edward Hewitt, *Birmingham.*

FOUL BROOD.

When the apiary of my friend Mr. Woodbury suffered so seriously from the disastrous ravages of foul brood, my own apiary, situated not many hundred yards distant, enjoyed perfect immunity from the disease. This was, to me, the more surprising, as we had often interchanged bees and brood combs, and he had kindly supplied me with numerous Ligurian queens. I saw enough, however, of the malignant character of the disease which attacked and devastated the hives of Mr. Woodbury, to regard with extreme apprehension the possibility of its appearance in my own apiary.

Until last spring I considered I had good reason to rejoice that, so far, my apiary had been perfectly free from any occurrence of the malady; but at the end of March I discovered a very bad case of foul brood in one of my best and most valued stocks. A strong colony was blown over in one of the frequent gales with which we were favoured in the early part of 1866. The hive was reinstated in its proper position, but a violent attack by the other bees of the apiary was made on it, every particle of honey was quickly taken away, and the bees disappeared. I now found six of the combs almost filled with abortive brood, chiefly of the previous summer, presenting an unmistakeable case of foul brood. No other hive in my apiary has, since then, exhibited the slightest signs of the disease, notwithstanding that many stocks must have partaken of the spoils when the affected hive was robbed. It would seem, therefore, that foul brood is not always of the extremely virulent and contagious character of that which devastated Mr. Woodbury's apiary, and has been so often experienced by German and American bee-keepers. I have had accounts from two or three individuals, who also state that they have discovered exceedingly bad cases of foul brood, which, notwithstanding the bees of their other stocks have had unhindered access to the supplies contained within, has remained entirely confined to the hives first affected.

The only way in which I can account for my own hive being attacked by this disease, is that during extremely hot weather in the preceding summer, when the hive was teeming with an abundant population, it was removed a distance of three miles, which involved confinement of the bees for many hours with some amount of shaking and other disturbance. Early in June, 1865, the hive, which was filling a large super, was transported into the country, the bees having been shut in the evening previously. The cover was removed from the super—a very large one on the adjusting principle—a sheet of perforated zinc being substituted for it, the wide entrance beneath being also closed with the same material. I considered the ventilation would have been ample, but on arriving at their destination I perceived that the bees were greatly excited. Few, if any, deaths took place in consequence, and the bees appeared to work with tolerable briskness, but their labours resulted in less success than the majority of the stocks in the same garden.

On the occasion of a cursory examination in the early part of the spring the bees appeared rather numerous but somewhat inactive; at the time of the destruction of the hive I found on two or three combs little patches of healthy larvæ and eggs, surrounded on all sides by foul brood. I believe it to have been impossible for the hive to have thriven, and have reason to be thankful that what at the time appeared to be a most unlucky and untoward accident, was doubtless a most fortunate one in its results for me. As it was, this hive, from its peculiar construction, would have been unexamined, and left alone until the time of putting on the adjuster super, consequently the presence of foul brood would have been totally unsuspected, and perhaps as hotter weather prevailed, its effects might have become more virulent, and its spread among my other stocks more certain and general.

With the exception of the last few sentences the foregoing paper has been written, and has been kept lying by for the pages of this Journal, for many months previous to the appearance of the letter of "A Lanarkshire Bee-keeper" on January 8th, and of "A Renfrewshire Bee-keeper" on February 21st of this year, so that it will be seen that I have not in the slightest degree been influenced by the remarks of those observant, reliable, and valuable contributors to apiarian science. I had previously acquainted Mr. Woodbury with my conviction that foul brood might be occasioned, and in my case certainly was originated, from excessive internal heat and undue excitement consequent on the confinement and removal of the bees during a period of great heat and of great activity in working. The quantity of abortive brood was so great that the principal mortality could only have occurred during the height of the breeding season. The six combs affected contained sealed brood to their very edges, the small portions tenanted by healthy larvæ, and eggs having been apparently cleared out for the purpose. Prior to the final accident and subsequent robbery, there was a large quantity of sealed honey in the side combs and at the tops of the six affected ones, so that there could be no suspicion of starvation having had any influence on the condition of the colony.—S. Bevan Fox, *Exeter.*

HIVES QUEENLESS, AND QUEENS UNFERTILE.

The following may, perhaps, interest some of your apiarian readers.

On Wednesday, February 20th, taking advantage of a very fine warm day, I overhauled four of my hives to ascertain the condition of their respective queens. A, B, and C were supplied with royal cells from a pure Italian hive, which came to maturity on or about August 24th. These hives were examined several times in the autumn, but from the agility of the queens in A and B, and an entire absence of brood, I came to the conclusion that the continued unsettled weather had prevented the queens from taking a successful wedding trip; although the drones, which were very numerous in both hives, were

finally expelled late in the autumn. In C, having failed to discover a queen after several examinations, I believed that no queen was in existence. D contained a queen, reared in a unicomb hive, which had not laid a single egg during the autumn, though I knew she was impregnated. I ventured, therefore, to put her at the head of a strong colony from which the native hybrid queen had been previously removed.

All these hives were thoroughly ventilated at the top from the beginning of November till the 20th of February, and stand on single posts out in the garden.

A and B contained mature pigmy drones and sealed drone brood in worker cells, but no worker brood, proving that their queens were still virgins as anticipated. C, though strong in bees, contained no signs of brood, and although the bees seem tolerably contented, is, no doubt, queenless. D contained many young bees, and plenty of worker brood. Breeding must have been going on in these hives in spite of free ventilation during the month of January, probably during the very severe weather we then experienced. In January, 1865, I found brood coming forward in a ventilated hive in very severe weather.

The consumption of food has been very great during the present season, but all my stocks are remarkably dry and healthy.—J. E. B., *Wolverhampton.*

DISTANCE WITHIN WHICH DRONES INFLUENCE.

Whether the fear of "An Old Friend of the Black Bee" is ever destined to be realised, that in the Hanoverian rat style his old and valued favourites are doomed to disappear before the foreigner, or, on the contrary, with more probability, that ultimately the latter may become absorbed by the predominating black, it is certain that the keen apiculturist cannot but look back with sincere pleasure to the time of the arrival of his first Devon stock, or earlier tiny box, and if (as in my own case) he possessed the variety alone in his district, the delight it afforded him in his walks to single out, and the nicety with which he calculated the distance of flight of his own active little yellow jackets amongst the humming throng on the clover field, or never thought their bright orange hue more brilliant than when contrasted with the purple of the more distant heath, when vieing with their duskier sisters in rifling its precious sweets. Then, subsequently, on visiting neighbouring apiaries, the sharp look out for hybrids. My first discovery of such is fresh on my recollection. A fine autumn afternoon found me, after a few miles walk, in an old manse garden—a beautifully sequestered spot, a hollow surrounded with hills, adjoining the peaceful old churchyard and ruined church where, till within late years, the curious stranger was shown the juggs (the collar which encircled the neck of the culprit, and by which he was chained to the wall, a relic of the severer punishment of bygone days). The bee-master asked my opinion as to the probability of a small third swarm surviving the winter, hived in a very large straw skep, a more suitable one not being at hand. I picked up a dead bee (hybrid) from the landing board, remarking that that pilferer had come far from home, but on inverting the hive found quite a sprinkling of similarly banded bees amongst the few combs built on one side of their capacious dwelling, and I was convinced, although their owner was somewhat sceptical, that here was a clear case of hybridisation. He, however, agreed to give the little band some feeding, on my telling him this would probably prove the best stock he possessed. I had the satisfaction of his coming to tell me the following summer that my propheey had been verified, the large hive had been filled and to overflowing, yielding him two fine swarms, and, if I remember, the earliest he had.

Visiting an extensive cottage apiary at a still greater distance in the end of last season to purchase a few hives, I saw at a glance two were hybridised, and, without touching, selected those two first by chance; after a careful examination of the entire apiary it turned out that for population or store each of these were worth any three of the long row.

The greatest distance, however, of drone influence coming to my knowledge was illustrated by the visit of a most enthusiastic bee-keeper last summer, who was nonplussed by the appearance of orange-banded bees, such as he had never seen in two of his stocks, his curiosity being fairly excited, and after telling the phenomenon to his acquaintances, and making inquiry far and near, at last tracked out my apiary, and made his appearance with a few of his workers in a vial to show me, and returned home triumphant with a light second swarm of the "real McKays" on his head.

The distances respectively from my apiary to the localities referred to, as measured in a straight line on the ordnance survey map, are one and eleven-sixteenths, three and one-sixteenth, and four and five-sixteenths miles.—A Renfrewshire Bee-keeper.

OUR LETTER BOX.

Fowls for Producing Eggs (*J. S., Sandhurst*).—Andalusians will do in a confined space, and they are good layers. They are also good for the table, but have dark legs. Houdans would be good birds for one of the runs, as they are hardy and bear confinement well. You do not say whether your runs are confined, or whether the birds are at liberty. Neither Andalusians nor Houdans sit, therefore, the third breed should be sitters, either Cochins, Brahmas, or Dorkings.

Continuance of Male Influence (*A. G. O.*).—It is a disputed point. We think at least three weeks.

Bullock's Liver for Fowls (*H. H. H*)—We do not advise meat-feeding at all, especially when fowls are in confinement. Give them plenty of soda of grass with abundance of soil adhering to them, and throw their food among it. You may give refuse cooked meat chopped fine to your fowls, if you will.

Face of Spanish Fowls (*Idem*).—The best exhibitors of Spanish fowls always keep the hens in partial darkness for some days before exhibiting them.

Cough Affecting Brahma Pootras (*R. W. B.*).—We have not the slightest doubt that fine weather will be the best doctor, and that the hen will speedily and thoroughly recover. She has probably a little ulceration.

Points in White Dorkings (*Novice*).—With the exception of the colour, White Dorkings are judged like Grey ones. They must be large, heavy, square, and have white legs with five toes. The colour should be white, not straw. There is latitude as to the combs, but the double are most esteemed.

Barbeziene Fowl (*J. S.*).—We are sorry we are unable to give you the information you wish. We do not know the Barbeziene fowl.

Game Hens not Laying (*Subscriber*).—It is because your birds are two years old and upwards that they do not lay. Pullets lay because they attain the age when they must lay; but after they have become adults, they follow fixed seasons, subject only to such varieties of temperature as we have recently experienced. For instance: in a house where we have sixty hens and pullets, our eggs diminished half when the ground was covered with snow. This latter has of late been a daily or nightly occurrence. Nothing interferes so much as snow with the health and comfort of fowls, and when they are not in health they do not lay. We never recollect a season when eggs were so scarce in January and the early part of February, and broody hens so much in request in March. Early chickens will be rare, and the good lusty April and May birds will, we hope, have such a "good time" before them, that in December it will not be seen they came late into the world.

Brahma Pootra Feathers (*F. Powell*).—The feathers you sent are most decidedly Mr. Boyle's school of colour, the brown between the pencillings being not more than usually appears in the second moult, though some birds remain quite free. The other strain named usually has the pencilling itself dark brown instead of black, and is of a more dead colour. The feathers are very good, and approach in their dark colour those which used to be shown by Mr. Teebay. If the black pencilling covered the ground rather more thickly I should call them perfect.—Nemo.

Lapwings (*G.*).—They have the first joint of one wing amputated, which prevents their flying away.

Liability (*J. R. Beyton*).—As you are sure the birds were well when you put them into the hamper, the purchaser is liable for the subsequent loss. If the bird dies speedily, equity would suggest that you supply another at a reduced price.

Exceeding Duty (*M. P. Draper*).—Such questions are not within our province; but we will add that there is no doubt you were quite right.

Book about Canaries (*H. W. N.*).—Brent's "Canary, &c." You can have it free by post from our office if you enclose twenty postage stamps with your address.

Breeding in Supers.—In reply to the first question of Mr. J. H. Walker which appears in his communication under the above heading in your last issue, page 220, the price of "Pettitt's Collateral Hive" is 45*s.*, with gratings and dividers cut in the crown-board for four supers, or with gratings for two supers, 42*s.* A wood engraving of this hive is given in page 23 of Pettitt's catalogue, with explanation and prices. To the second question—for the straw hive with the round hole in the top, a circular adapting-board would answer, as represented in Pettitt's catalogue, page 36, on hive No. 19, with the gratings cut in the centre and shut off with a zinc divider. This adapting-board can be firmly fixed to the top of the hive with two or three long screws, and unless the queen is a very small one she seldom ventures through the gratings, and if the supers are well ventilated breeding will seldom take place in them.—Sudbury.

POULTRY MARKET.—March 27th.

We have a short supply, and prices are well maintained with a rise as compared with last week. The effect of the long and severe winter is plainly seen, and if there were a good trade, poultry would be very dear.

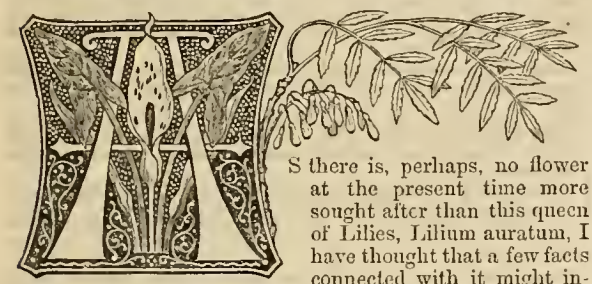
	s. d.	s. d.		s. d.	s. d.
Large Fowls	4 0	to 4 6	Pheasants	0 0	to 0 0
Smaller do.	3 6	4 0	Partridges	0 0	0 0
Chickens	2 6	3 0	Grouse	0 0	0 9
Goslings	7 0	7 6	Guinea Fowls	2 6	3 0
Ducklings	3 6	4 0	Rabbits	1 4	1 5
Pigeons	0 9	0 10	Wild do.	0 9	0 10

WEEKLY CALENDAR.

Day of Month	Day of Week	APRIL 11—17, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
							m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
11	Th	Meeting of Royal and Zoological So-	56.1	35.5	45.8	19	16 af 5	46 af 6	33af11	9 af 1	0	1 9	101
12	F	[cieties, 8.30 P.M.	56.0	36.3	46.1	25	14 5	48 6	41 11	57 1	8	0 53	102
13	S	Royal Bot. Society, Second Spring Show.	55.6	33.6	44.6	15	12 5	50 6	after.	38 2	9	0 38	103
14	Sun	Palm Sunday. Princess Beatrice Born,	57.3	36.3	46.8	15	9 5	52 6	1 2	12 3	10	0 22	104
15	M	[1857.	58.1	37.7	47.9	19	7 5	53 6	11 3	42 3	11	0 7	105
16	Tu	Royal Horticultural Society, Second	57.3	38.6	46.9	25	5 5	55 6	20 4	9 4	12	after.	106
17	W	[Spring Show.	58.0	36.1	47.0	14	3 5	57 6	28 5	35 4	13	0 23	107

From observations taken near London during the last forty years, the average day temperature of the week is 56.9°; and its night temperature 36.0°. The greatest heat was 73°, on the 14th, 1852; and the lowest cold 20°, on the 15th, 1862. The greatest fall of rain was 0.56 inch.

LILIUM AURATUM AND ITS CULTURE.



As there is, perhaps, no flower at the present time more sought after than this queen of Lilies, Lilium auratum, I have thought that a few facts connected with it might interest those who are possessors of the bulbs, either as just imported from Japan, or else grown in the previous season by some nurseryman.

The history of the bulb affords a remarkable instance of commercial enterprise and the advantages of rapid communication which so characterise this age. It is now only a very few years ago—in 1862, that I was at Bagshot, at Mr. Standish's nursery, when the treasures that Mr. Fortune had collected in Japan were received there. There were shrubs, trees, herbaceous plants, and amongst them some bulbs of a Lily, which Mr. Fortune had described as twice as large as lancifolium, wondrously fragrant, and most gorgeous in its appearance. In the following July I was just entering the Royal Horticultural Society's garden, when I met some of our great growers coming out. "Is there anything remarkable?" was my question. "Yes. Mr. Veitch has there the grandest Lily that has ever been seen." And there, sure enough, diffusing its fragrance around, the admired of all admirers, the cynosure of all eyes, was Lilium auratum. It was shortly afterwards exhibited by Mr. Standish at the Crystal Palace, figured in botanical and floral books, and, in fact, became quite the rage. But then came the question, Who was to have it? Bulbs of it had been sold at fifteen guineas; and for years, we were told, the part of the multitude was to be that of the boys outside the eating shops—a look and a smell, but no taste. However, of course everybody who had any correspondent, or chance of a correspondent, in Japan, immediately wrote out to him, sending figures of the Lily, and requesting as many as possible to be sent home. By-and-by announcements of the arrival of the bulbs were made; but either the roguery or the blundering of the Japanese caused endless confusion. Heaps of other Lilies, which were not worth their weight in earth, were sent. One firm had 1500, not one of which came true; another 3000, in which the auratums were few and far between. After a while, however, things began to right themselves, and Mr. Stevens was able to announce, not merely supposed bulbs of Lilium auratum, but guaranteed ones; and now the bulb, which a few years ago could only be purchased for fifteen guineas, can be had for half-a-crown. Other facts have come to light since then. One is that there are many varieties of it, from pure white to those with a red stripe down the centre of each petal instead of the golden one from which Lilium auratum derives its name. Another was, that it was a great mistake to have described it, as was done, as one-flowered, inasmuch as bulbs with ten, twenty, and even forty flowers have been grown, thus increasing its attractiveness and value. An announcement has been made that upwards of 30,000 bulbs of it have been sold during the last two months at Stevens's auction-rooms, so that now the million may become possessors of this most lovely flower.

And now as to its cultivation. There have been many opinions expressed as to the most suitable soil for it, some advocating loam and peat; others loam, peat, and leaf mould; and others simply peat; while it is evident from some of the bulbs which have been imported that they have been grown, either naturally or artificially, in some strong clayey loam. Mr. Charles Turner, of Slough, who has been a most successful grower and exhibitor of it, uses peat and sand only; and in my small way I have followed his advice. But, as in everything else, there is a way how not to do it as well as to do it, and that way, I am sorry to say, I arrived at last year: let my experience, then, be a warning to others. The first mistake I made was in overpotting. Over-anxious, perhaps, to increase the size of my bulbs, I gave them far more room than they required. This would, probably, have been of but little importance had I not committed another mistake—viz., that of leaving the pots out exposed to the very heavy rains we had in August and September of last year. This so completely saturated the soil, that I am sorry to say I lost half of the few bulbs I had, and have learned a lesson which I hope others may profit by as well as myself. I do not think they ought to be put out of the cool greenhouse or pit, but treated as a greenhouse plant. It may be said, You place greenhouse plants out of doors. Yes, but it is when they are making their growth; whereas I put the Lilies out when they ought to have been going to rest, after their flowering was over.

Another fact that I have ascertained with regard to this Lily is, that when the seed is sown you need not be in the least discouraged if it do not come up the first year, or imagine that therefore a year is lost. Two years ago I sowed a pod of fine seed. It was sown in a pan, and placed in a propagating-house belonging to a neighbour. All last season there was not a sign of a plant coming up, yet when the seed was examined it was plump and fresh: and towards autumn I could see that very tiny bulbs were being formed underground, and there this spring they have come up as plentifully as Blackberries.

One remark more as to the newly imported bulbs. These come home, many of them at least, overland, and are plump and sound. Whether they are so, however, or more dried, the best plan is, I think, to pot them in small pots; and where there is convenience for so doing, to plunge them in the tan or sand of a propagating-house, giving them but little water, and encouraging them to throw out roots. When once they have done this all danger to the bulb is, I think, passed; and as soon as they have pushed out their roots vigorously they should be repotted in somewhat larger pots. What with importation, seedlings, and division of the roots, it cannot but be that ere long this noble flower will be as common as the lovely and still favourite Lilium lancifolium.—D, *Deal*.

CULTIVATION OF PEAS.

As an amateur gardener, having a town garden, I may as well state at once, that to obtain the largest quantity of produce in the smallest space of ground is to me a matter of very great importance, always provided that the quality be such as to give the quantity its full value.

My garden slopes off from a street on a hill-side towards the west, or rather north of west. On the north, south, and west I am blessed with a very pretty view of the country, and I am consequently well sheltered from the east.

The kitchen garden lies on the lower portion of the slope, and nominally occupies about three-quarters of an acre of ground; but what with steps properly so called—make-believe steps breaking the abruptness of the slope—and the room occupied by walks and some dear old Beech trees which have survived the summer suns and wintry storms of a century and half, my readers will readily calculate that the actual garden for cultivation is not very extensive. We (James and I as directors), make the most of it for choice crops by never attempting to grow Potatoes and Turnips, and thus we obtain a full supply of Peas, Beans, Sea-kale, Asparagus, Celery, Rhubarb, Cabbages, Cauliflowers, Greens, Onions, Carrots, &c., out of that portion which is allotted to cropping; but then James has two crops out of it every year.

The other portions of the kitchen garden are divided amongst my own peculiar favourites—a miniature fruit garden, well stocked with Apples and Pears, chiefly supplied to me by Mr. Rivers; a good supply of Strawberries and Gooseberries, beds of flowers for nosegays, and a bank left purposely in rude disorder for growing Ferns, &c., known as the "wild bit," and a pretty corner it is.

My flower garden lies on a flat piece of ground between my house and the Beech trees, and I do not like to rob that of its summer pride and beauty for nosegays, though I do like to supply flowers to my gardenless neighbours, so I lay claim to some beds for Pelargoniums, Asters, Phloxes, Zinnias, &c., in the kitchen garden, which looks all the brighter for the intrusion. In fact, it is as well to confess the truth at once, my garden is a curious, not to say heterogeneous mixture of the useful and the ornamental. Nevertheless, although it is a bad subject for description, it is a pleasant place to dwell in. My friends are wont to admire it, and so do I. Now, a museum may be a heterogeneous collection; but it may be very orderly for all that, and I feel fully justified in claiming the character of orderly for my garden; but this it owes to James, and not to me.

Well, but the Peas. Dear readers, I thought you would understand better what I may have to say about Peas or anything else, if you could in some degree localise yourselves with me: hence my preface. I grow Peas largely, considering the extent of my garden ground. Early sorts are always sown in short rows; but I care little for the small, shining, round, green shot, which are to my fancy the usual result. One dressing of each kind usually satisfies me; but this one taste I consider due to the gardener for his trouble and to the variety for a verdict. I wait for three favourite kinds—Fairbeard's Champion of England, Dent's Marrow, and the Gardener's Delight. All these rank with me as Peas, in contradistiuction to shot. Dent's Marrow is the sort I prefer, but as cooks and gardeners are against me, I must yield the palm to the Gardener's Delight.

In all gardens which I have had an opportunity of seeing, I have generally found the plan of narrow rows adopted for Peas. The seed-row is seldom more than 6 inches wide, oftener 4. My own Peas were formerly sown thus; but James has changed all that, and I have them now invariably planted wide—that is to say, from 12 to 14 inches throughout the row. A shallow trench is made of this width—namely, wide enough to admit the easy working of a 12-inch rake. A line is stretched so as to allow the edge on each side to be cut down clean, and the trench made nearly 2 inches deep, the earth being taken out with a flat square shovel. It is then raked down to make it perfectly level, but as no treading is allowed in the trench it is levelled and raked from the side.

It is now ready for the seed, so the garden line is stretched through the centre of the trench as a guide to the sower. This gives three well-defined lines—namely the two edges and the centre. Five rows of seed are sown. The three defined lines have the single seeds dropped exactly opposite each other. The two intermediate rows come in the angles, as represented in the accompanying diagram. Each seed is thus about 3 inches apart from every other seed. The seed is covered with soil in the usual way.

outer edge . . . . .
. . . . .
garden line . . . . .
. . . . .
outer edge . . . . .

When the young plants have grown about 2 inches high they are sticked with branchy young twigs about 2 feet high. These small sticks are dispersed amongst the young plants throughout the row, so as to catch their first tendrils and draw them into good upright growth. As soon as more support is found necessary, Pea-sticks, well branched and about 4 feet high, are stuck thickly on each side close to the Peas, but not now in the centre. These sticks, like the first short row, stand quite upright. My Peas, however, are vigorous growers, and rejoice in a rich garden soil, so they accomplish a journey of 8 or 9 feet skywards: consequently a third support is required, and this is supplied in the form of less branched but more substantial sticks, just such as are used for Kidney Beans. These are placed slanting, being stuck in about 6 inches beyond the rows at the bottom. The tops are brought to meet thus—Λ.

The object of the tall sticks is not only to enable the plants to climb higher, but as the sticks are fastened together at intervals with tarred cord, to take which a tall stick is every now and then laid across, in a sloping direction, the whole mass is held together, and is thus enabled to stand the brunt of almost any storm which may arise. I have very often had the satisfaction of seeing my Peas unmoved and uninjured, when neighbouring gardeners in the district have been complaining that their narrow and slightly-sticked rows of Peas have been nearly demolished by the "nor'-westers," which are our prevailing winds.

This mode of sticking gives so much air and room to the inside portion of the crop, that no ground is lost, and the whole rows are usually well covered with a mass of fine pods throughout the "length and breadth of the land."

I have stated that my Peas grow on rich land. James is a strong advocate of deep trenching, change of manures, change of crop, and double cropping. He grows a large quantity of Celery; this necessitates deep work and large supplies of manure. By changing the Celery ground every year, the whole of the cropped ground is kept well worked. The Peas always succeed the Celery, consequently have the first benefit.

My rows of Peas are about 52 feet long, and are placed 5 feet apart to allow of the wide sticking. Each row takes a quart of seed. No crops are planted between.

Now, the first impression on the mind of the reader will probably be, that more ground is occupied for a given quantity of Peas by this mode of culture, than by the ordinary narrow-row plan; but my experience as a housekeeper, as well as gardener, tells me that I obtain nearly double the amount of produce from my ground by the wide plan! I can most unhesitatingly say one-third more, and my own conviction is that double is more nearly correct.

The next point for consideration will perhaps be, whether sticking so many times does not cause much additional trouble; but, which is better, to stick three miserable rows once, or one valuable row three times? If the narrow rows are sticked twice, as they sometimes are, then three times two are six, exactly double the trouble for the narrow rows! Of course, some people may find a difficulty in procuring Pea-sticks of from 10 to 12 feet long; but then they cannot grow the Gardener's Delight or Dent's Marrow in perfection. I pity them.—C. P.

BLUE PRIMULA.

Do you happen to know the origin of the blue Primrose, or rather perhaps Polyanthus, now quite banished from modern gardens? Both a neighbour and myself have been trying in vain to obtain a pod of seed, but neither in the open border nor under glass are we successful. This seems to point to a hybrid origin, but I know nothing but a blue self Auricula that could have turned the yellow of a Primrose into blue.

Last year I removed to my flower-borders the best out of a lot of Polyanthus seedlings. Strange to say some plants which were thrum-eyed last year, are, as regards the majority of their flowers, pin-eyed this.—G. S.

[The smallness of the pips and grey blue of the corolla suggest that Primula denticulata may have some title to its parentage. P. venusta or others might impart such a colour. —Eds.]

Iresine Herbstii.—Not having seen any reply respecting the flowering of Iresine Herbstii in England, I enclose a small

spike from a plant in flower here. As a plant for table decoration it is a valuable addition, and for bedding purposes far superior to either Perilla or Coleus Verschaffelti, it having remained here uninjured by frost, when both the others were killed.—Samuel Watts, *Gardener, Abeylasney, Carmarthen.*

HEATING AND UTILISING A HOUSE-OF-ALL-WORK.

My greenhouse is a lean-to, 30 feet by 14, and the aspect S.S.W.; the back wall, lined with brick, is 9 feet 6 inches high, the front wall 6 feet high; the roof, rather flat, is fixed, and glazed with 21-oz. glass in squares 20 inches by 16. The front lights are all made to open, and there are wood shutters as ventilators in the back wall, three on a level with the front lights, and two others just under the top of the wall-plate, each measuring 2 feet 6 inches by 9 inches. There is a door 3 feet wide exactly in the middle of each end. The east end consists of 3 feet of stone, with glass above; the west end is a 9-inch brick wall, with 16 inches deep of glass at top. I have hitherto used a Walker's iron stove to exclude frost, placed exactly in the centre of the whole length against the back wall. What I aim at is, to grow Vines with little or no forcing; to preserve bedding plants through the winter; to propagate cuttings, &c.; and to use, if practicable, the propagating-bed or pit for Cucumbers, possibly Melons, when spring propagation is over. Is the combination of these objects practicable?

The present internal arrangement is as follows:—The whole floor is laid with common flooring-tiles 9 inches square; against the back wall is an earth-bed 2 feet 6 inches wide from end to end, (except a space of 2 feet 6 inches where the present stove stands), kept up by an 18-inch brick wall. Three rows of wood pegs in the wall support three tiers of shelves. The front is thus arranged:—A series of brick piers 9 inches square, is built at a distance of 3 feet 3 inches, outside measure, from the front wall, all being open below, which piers support flags about 2½ inches thick running the whole length. From the upper surface of the flags, which is 2 feet 9 inches above the floor, is a further height of 1 foot to the level of the wall-plate, with 20 inches of glass above, making the whole height from the floor to the wall-plate 3 feet 9 inches. Into the brick piers, both front and back, I have built some bars of one-eighth-inch sheet iron, 15 inches long by 1½ wide, so as to project 3 inches on either side of the piers. Upon these, from front to back, I lay cross stays of wood, of course 3 feet 3 inches long, being the width of the flags above, which support a most convenient row of shelves, moveable at pleasure. Under the shelves, on the floor, I store flower-pots, coke, and watering-cans, and upon the shelves, boxes, tools, &c. I should be obliged by some suggestions as to heating.—G. P. C.

[We should have preferred your greenhouse vinery 14 feet wide, and 6 feet high in front, to have been more than 9½ feet high at back, as the flatness of the roof will render it chiefly useful for summer crops, though also suitable for keeping plants in winter. We think that you will have abundance of ventilation, and no doubt these openings in the back wall, on a level with the front lights, will be useful, but we would have preferred three instead of two ventilators, just under the apex at the top of the wall, as that will be the hottest place. However, it would be a pity to alter them now after the wall is finished, but if you find these two ventilators do not give you quite enough of air in very hot weather, you can take out a square of glass just under the apex at each end, leave them out in summer, and replace them in the end of autumn. You will hardly want this if you grow Cucumbers and Melons in summer, and in that case it will not be advisable to open much the lower ventilators in the back wall.

Now, as to your proposed combinations:—1. You may grow Grapes with little or no forcing; but with little heat we would have preferred Muscat Hamburgh, Royal Muscadine, and Buckland Sweetwater, to be joined to the four Hamburghs, instead of Muscat of Alexandria, and Grizzly Frontignan. To ripen the latter well will require more heat than would ripen the Hamburghs.

2. The house will do admirably for your bedding plants.

3. To propagate by cuttings in spring, and at other times. This would be best done in winter and early spring, if the Vines are in the house, and you have no desire to start them early so as to necessitate forcing, by having a part of the house heated, and covered with glass, &c, whilst the rest of the house may be kept cool, with plenty of air, to suit bedding plants.

4. Provided such heat can be given, Cucumbers and Melons can be grown in the same house at the same time with the Vines, where the Vines do not shade. Before the Vines shade they might be grown in the centre of the house, in the eight-feet space left, in pots. Even after the Vines were pretty well established, you might have a narrow frame or box nearly 4 feet in width set in the middle of the house, with paths 2 feet wide, back and front, and if you threw bottom heat into that, by hot water or otherwise, and covered the glass at night to keep in the heat, you could have early Cucumbers growing there by the time the Vines were budding, and then when the Vines were in full leaf, the rays of light that would pass would serve pretty well for the Cucumbers in early summer, after the glass of the frames was removed. There is often loss, however, in attempting too much, and, therefore, though we would not object to a few pots of Cucumbers and Melons, we would advise making your house chiefly subservient to Vines, bedding plants, and other greenhouse plants, and having a propagating-bed heated separately.

We consider that the Walker's iron stove you now possess is quite sufficient for ripening late Grapes and keeping bedding plants over the winter, but you cannot well use it for securing heat for propagating-purposes. As you are acquainted with the brick Arnott's stove and the small boiler used by Mr. Rivers, then you cannot do better than use one of them; and as you have gone to the expense of the stone platform in front, and wish that to be the base of your propagating-bed, we would advise the stove to stand in front of the house, and there it must be sunk so much that the top of the small boiler is not higher—better a few inches lower—than the level of your stone platform. You must not have the boiler higher than the pipes or tank will be, but as much below as possible.

You have shown the proposed stove placed near the front of the house with a short horizontal pipe, as we always recommend for such stoves, and then an upright pipe through a square of plate iron instead of glass, which is quite correct, and better than the other proposed plan of taking the smoke-pipe across the house under the glass, and then out near the back of the house. The additional dry heat thus gained would be anything but real profit; and if the furnace and ash-pit doors are close, the draught can be so regulated that there will be little loss of heat. But for the pleasure of doing all the stove work inside, such a stove could be placed close to the front wall, and the openings for feeding and ashes might be outside the house.

There need be no difficulty as to soot collecting in the short horizontal pipe close to the stove, as, if coke or clean cinders are used, little will collect so near the fire. A brush may be passed down the pipe now and then, and the soot may be pulled out easily from the horizontal part when the feeding-door is nearly opposite the smoke-pipe. In all such stoves it is desirable to have the feeding-door a foot or 18 inches above the grate-bars, and then a small poker must be used, and the hand put in on lighting. Of course this gives a little trouble. In a recent volume there is a plan of fire-bars which fall down into the ash-pit, and thus allow all to be easily cleaned out, and which are as easily put in their place again. All stoves inside of a house require a little nicety in management, and as economy in fuel is a great object, the high feeding-door we consider in that light to be an advantage; otherwise there is no objection whatever to what you propose—namely, a high feeding-door, and a door opposite, just above the fire-bars, to permit of easily cleaning out and easily lighting—except the expense of the additional door, and the difficulty of so keeping it close as to prevent more draught than would be required; for after being fairly set going, the economy of such stoves consists in imparting a genial constant heat with the smallest consumption of fuel.

It is never desirable to make the water boil in the pipes. The fire must be replenished according to the heat wanted. When the heat is strong from a keen draught, the coke or fuel will become mostly incandescent, and when the draught of air is lessened the fuel will remain so a long time before being consumed. How the heat rises from the coke to the boiler that forms the top of the stove, would just lead us to tell how the heat rises from the grate in a kitchen to the large pot or kettle that is placed over it.

There need be no fear of deficient draught if your horizontal pipe is short, from 1 to 2 feet in length, and then turns upright into the open air; but if you have the least doubt satisfy yourself by all means, by trying the stove first without the boiler. It would be well to have a cowl over the top of your smoke-pipe outside, to prevent the rain finding its way into

it, for that will cause soot to accumulate more than anything, and it is difficult to clear it out of iron pipes, and if the material is sheet iron the pipe will soon wear out. A bent iron pipe placed in such a stove would not suit you so well as a small boiler. In larger furnaces it would answer better than in a stove, where the fireplace is more limited in size. There is, however, little force in the objection to such a bent pipe being soon worn out. A strong cast-metal pipe, always full of water, may be depended on, if it have fair play, to last as long as any boiler. These small boilers, as used by Mr. Rivers, placed on the top of such an Arnott's stove as you propose cost little, and in your case we think would be decidedly preferable.

As to using pipes, a gutter, or a tank, over the flag-stone platform—which platform we presume is water-tight, or you would not have the dry shelves and storage-room beneath it—the subject of pipes *versus* tanks has so often been discussed by ourselves and others that there is little to be added, as we consider each system best just as it can be most easily and economically applied. One error we would just notice. Many speak of the heat from hot-water pipes being so much more moist than that from a flue, or a stove; and, again, of the heat from a tank being so much more moist than that from pipes. Now, all are equally dry if the pipes are close and sound, and the tank closely covered. If the covering of the tank is loose and open there may at times be too much escape of moisture. Well, you want to know how to proceed in either case. Then, first, as to pipes. You may have four-inch pipes if you wish, but two three-inch pipes would do for such a place. These would cost respectively from about 2*s*. 3*d*. to 2*s*. 9*d*. a yard, and more for bends and circular junctions. Presuming that your flag-stone is water tight and abuts against the front wall of the house; after placing the pipes along the stones, and having a small cistern at the end, alike to supply the pipes and boiler, and permit of the expansion of the water, you may either cover the pipes with slate, &c. an inch or two above them, to receive the pots, and plunging material if deemed necessary, or you may, as we would prefer, place open rubble round the pipes and for an inch or so over them, and then nearly an inch of fine washed gravel, to be followed by sand, &c., for the pots of cuttings. In the latter case we would have at every yard or so a small earthenware drain-pipe set upright, its upper end open and furnished with a wooden plug, its lower end also open and standing a couple of inches above and clear of the flags. From these drain-pipes one can let dry heat into the atmosphere of the propagating-place by taking out the plugs, or one can have moist heat by pouring some water down through the drain-pipes. In either of these cases you will have to make your stone platform the base of your propagating-bed.

To make a tank, we would proceed thus—Make sure of all joints in your flag-stone platform with white lead or cement, also where the flags join the front wall cement that wall to the height of at least 6 inches, if 9 all the better. As you proceed lay a brick edgewise in cement on the flags, and close to the front wall, that will form the front of your tank, then on the inside edge of your platform lay two bricks on bed in cement, which will form the back as it were of your tank. In the middle of the space left, run a brick on edge lengthwise, leaving an open space at the farther end, the one side to receive the flow-pipe from the boiler, the other to communicate with the return-pipe. Then cover all the sides and tops of these bricks, and the exposed parts of the flags, with a layer of cement, and when fairly set it is ready for the water. You may then cover over with thick slate laid in cement, common house slates loose, iron plate, &c. The front you can raise by brick on edge, or as giving rather more room, by a board. We think that if you can depend on your flags the tank would be the cheaper in your case. We may add, though it is chiefly a builder's question, that in forming such a tank, the bricks should be soaked before using them. The front wall and flags should be well moistened before applying the coating of cement, and if the flags are smooth on the surface, they should be made a little rough with the chisel before applying the cement. From 3 to 4 inches in depth of water will be ample. It will be as well to have some openings to let the heat up when wanted, instead of being confined below the propagating-pots.]

EARLY PEAS.

We had hoped our last letter in The Journal of Horticulture would have sufficiently explained the irregularity of character so untruly attributed to our First Crop Pea. Your correspondent in the issue of March 28th has evidently either fallen into the same error that "Ronnoc" laboured under —*i.e.*, confusing the old Carter's Early with our recent introduction, Carter's First Crop Pea—or, as we also suggested in our former letters, he has been the victim of a spurious substitution.

We are gratified to find our statement of its true merits confirmed in the Journal of April 4th, and we are convinced if more evidence of its sterling quality as the best "First Early Pea" were wanting, many hundreds of our customers who have procured the true stock from us, and have grown it more than one season, will be glad to give an impartial report of its real merits.—James Carter & Co.

THE OÏDIUM, OR VINE MILDEW.

Having found the following to be a complete cure for the above disease in Vines, I think it right to give it publicity, particularly as the season is now advancing for its use:—1 lb. of flowers of sulphur, 1 lb. of slaked lime, 1 gallon of rain water; to be mixed well together, and when boiled twenty minutes, to be taken off and strained; then to be added to the liquid 1 gallon more water, and boiled twenty minutes longer; next let the liquid cool (it will be of a fine amber colour), and put it into a large jar, and cork.

When to be used, take 1 pint of the above and throw it into 16 gallons of rain water, with which syringe your Vines, and it will not injure the fruit or leaves. If the Vines are under glass, syringe with cold water four days after its use.

I grow here a large number of Vines against and on walls for champagne and otherwise, and for the last four years have found that a single syringing with the above over my Vines on walls soon after blossoming, and when the fruit is about the size of very small shot, acts as a complete preventive to the disease showing itself in any shape whatever, although it is in its very worst form amongst my neighbours' Vines within a few hundred yards of me.

So effectual has the application proved with me that last year I sent my gardener to syringe several of my neighbour's out-of-door Vines, and in every case with the most decided success, even where the disease had made considerable progress. The mixture is on no account to be used during the blossoming of the Vines.

I do not see why it should not act as a preventive against other blights, and I intend this year to try it on other fruit trees, not waiting until the blight actually makes its appearance. I also intend to mark out about a land yard of my late Potato-ground, which my gardener shall syringe with the above twice a-week, commencing from about the first day of July next, and should there be any beneficial result I shall gladly inform you in due course.—W. A. B.

SOWING AND CULTURE OF CYCLAMENS.

Who does not love and admire Cyclamens? and they deserve to be admired, not only for their beauty, but because they are as easy to grow from seed as the commonest of annuals.

Having a few old plants in good bloom in March, and wishing to increase my stock, I placed them on a shelf near the glass in an airy greenhouse, keeping them dry rather than wet, and by August I had plenty of pods full of good seeds, ripening at different times. I visited the plants every afternoon, taking care not to gather the pods before each had partially burst, and they were then carefully packed and put away until the time of sowing—an operation which I perform according to the following directions. Early in March prepare six-inch pots by three-parts filling them with drainage, over this place a good layer of moss, and above the moss half an inch of loam, leaf mould, and silver sand passed through a sieve, using the roughest for the bottom. Make the surface firm, place the seeds, which should previously be soaked for twenty-four hours in milk-warm water, about a quarter of an inch from each other, and cover them very lightly with silver sand. Water gently through a very fine rose, always using warm water, or that from which the chill has been taken off, place a piece of slate or glass over the pots, and set them in a warm, close Cucumber or cutting-frame. In a month the seeds will vegetate, and when this takes place the seedlings must not be allowed to become dry.

When the seedlings are large enough to handle pot them in small thumb pots in turfy loam, chopped moss, and a little

silver sand, using plenty of drainage; return them to the frame for a week or two, keeping them near the glass, and watering them very carefully. At the end of that time they will want more air, and a little shading will be necessary in very bright days. The plants must not be placed out of doors, but should be encouraged in the greenhouse, and when they have filled the thumb pot with roots shift into 2½-inch pots, using the same compost as before. By the following March there will be enough of them in bloom to amply reward the grower for his trouble. Dozens of my seedlings sown last March were beautifully in bloom in ten months after sowing, and have been so ever since. Many of the corms or bulbs are as large as a two-shilling-piece. The varieties are persicum rubrum and those of the ceum and Atkinsii race.—H. C., *Hendre Gardens, Monmouth.*

THE GARSTON VINEYARD.

(*Continued from page* 64.)

After passing through the span-roofed houses numbered 3, 4, 5, and 6 we turn to the left, cross an open space on the north side of the dwelling-house, and enter the early vinery. This is principally planted with Black Hamburgh Vines; but there are one or two Trentham Black Vines, from which Mr. Meredith has cut magnificent bunches. Some of these were shown at the Regent's Park in July, 1865. At the same show Mr. Meredith exhibited the heaviest bunch of Black Hamburgh on record. This magnificent bunch, which weighed 9 lbs. 8 ozs., was produced on the point of a shoot, and took the form of an umbrella. I had the pleasure of seeing it a short time before it was cut; it was very symmetrical, the berries as black as sloes, and so even that they might almost have been cast in a mould. I may mention that several other bunches were grown on the same Vine, which was by no means a strong one.

The early vinery is 65 feet long by 23 wide, and has a span roof. There are six rows of four-inch pipes, three rows on each side of the walk in the centre of the house. There is also a large flue below the path. The ends of the house are east and west, so that one-half of the Vines are partly shaded by the others, yet those on the north side are as good as those on the south. The walk through the centre is about 5 feet wide; this leaves a border on each side 9 feet wide. The borders inside the house are well elevated above the ground level, and are about 4 feet 6 inches deep. There are also on the north and south sides outside borders, which are likewise about 4 feet 6 inches deep near the front of the house, but taper off towards the outside next the walk, where they are about 2 feet 6 inches above the general ground level. They are about 3 feet deep at the sides, so that below the ground level there is not more than 6 inches of good soil for the Vines to grow in.

I shall shortly give a section of the Vine-borders and vineries at Huntroyde, also a general reply to the disbelievers in the system of Vine-border making which I recommend. The borders I have made are not for the purpose of growing show Grapes alone; they are formed to last for many years, and to avoid the necessity of destroying the Vines just when these ought to be at their best. I ask "G. H.," Which is the less expensive mode of making a Vine-border—to make it thoroughly in the first instance, supposing it to cost £60 or £100 according to size, and with a view of its lasting in good condition sixty or a hundred years, or to make ten or twenty borders during that time, involving a cost for each border of from £15 to £30, and a loss of one year's crop of fruit every time the border is made, besides the disadvantages of having the place upset by these alterations?

The structure just described being the early house, during the first months of spring spare lights are placed over the outside borders. The house rests on pillars, and there is no glass at the sides. There are about sixty Vines, from which have been cut the Grapes exhibited at the early shows, winning so many first prizes during the last six years.

Retracing our steps across the open space at the back of the dwelling-house we enter another house facing that which we have just left. It is of the same dimensions, and constructed on exactly the same principle as the early Hamburgh-house, having borders outside as well. It is planted with Muscat of Alexandria and White Tokay, and when I saw it the Vines on each side of the span were covered from the soil to the ridge of the roof with bunches of beautiful amber-coloured berries very even in size. The bunches were most symmetrical, and would average about 2½ lbs. in weight, and in number seven on each Vine. Provision is made for heating the border if necessary. The soil in this and the early Hamburgh-house comes close up to the hot-water pipes, of which there are six rows. The Vines in each of the above houses were planted in a growing state in July, 1857; and although Mr. Meredith has cut such wonderful crops from them, he expects to obtain still greater results —indeed the appearance of the Vines would lead any one to the same conclusion. Every year they rapidly increase in size and productiveness. I did not prick over either the outside or inside borders in search of roots, but any Grape-grower could tell from the Vines that the borders were filled with fine healthy roots. "G. H." may take my word that roots are to be found in any quantity both outside and in; if there is any difference in their healthiness those in the outside border will perhaps be the best.

Leaving the early vinery we pass to the west side of the vineyard. Here there are several lean-to houses for the growth of Peaches and Nectarines, and in each the trees are in a very flourishing condition and give promise of good crops; but it struck me in passing through that they did not receive so much care and attention as the Vines. In front of this range is a span-roofed pit used for growing Tomatoes, &c. Retracing our steps to the early vinery and turning northwards, we pass between several ranges of Pine-stoves and convenient span-roofed houses for the growth of young Vines, Cucumbers, and Melons, situated on each side of the passage leading to the dwelling-house. There are seven of these forcing-pits. They are about 80 feet long by 12 wide, and are very efficiently heated with four-inch piping.

I now come to Mr. Meredith's splendid house of mixed Vines. On entering it, the sight of the enormous bunches calls to mind the wonderful Grapes mentioned in the thirteenth chapter of the Book of Numbers; by the brook Eschol, wonderful Grapes were grown without the aid of man. There is no doubt that the land by the brook Eschol was exceeding fertile; there is also little doubt but that the Vines extended themselves from tree to tree, and that their roots were freely watered by the brook. This, then, should teach us a useful lesson, and one that I have before particularly tried to impress on the memory of those who advocate the once-a-month system of watering the Vine; and the fact of the Vines producing such wonderful Grapes in their wild state, would lead one to believe that the extending system of Vine-growing so much written about lately is one that may be safely tried, and there can be little doubt but that it would succeed. If, however, this system were adopted to any extent, a single house would be required for each variety of Grape; double or treble the number of houses for the growthof Vines would, therefore, be necessary.

Mr. Meredith has shown the world what he can do by keeping the Vine within a certain limit, let him now show us what he can effect with the extending system. He could do this justice in a house of similar dimensions to that which I described in these pages some months ago. He might make a section of a border in the centre of such a house, there plant one Vine under the north side, and another under the south, and train the Vines right and left, adding to the border as the roots extended. Each set of branches would have just 51 feet to travel from the main stem, and about 25 feet of roof in width. I have little doubt that, under proper treatment, two Vines would cover the whole roof of this large structure in six years from the time of planting. Would not this be worth trying? If it were thought desirable a ribbon of Grapes might be obtained in such a house by grafting different kinds on the principal Vine. Thus a yard or more in width of white Grapes might run the whole length of the roof, then a yard of black Grapes, and so on. What a magnificent sight this would be. Large numbers of pot Vines might still be grown in the same house, and many other subjects that would help to pay for nursing the Vines till such time as they had arrived at a size to produce Grapes by the half ton. Good crops of Grapes might be taken from the Vines after the second year.

Returning to the house which I had begun to describe, and which called to mind the wonderful Grapes found by the brook of Eschol; although it is of much smaller dimensions than that to which I have been referring above, it is of no mean size, being 128 feet by 17. The roof is rather flat, at least, that part of it facing the south, and there is a short north light about 5 feet wide, and under this the walk. At present there is no outside border, but Mr. Meredith intends to make one very soon; the border inside is about 12 feet wide, and 5 feet 6 inches deep. Let "Vitis," or any of the advocates of shallow borders but see this wonderful house of Grapes, and I

think their opinions will be changed on the instant. The Vines have been planted about six years, and there are five rows of four-inch pipes on the top of the border. To make a border outside 12 feet wide, and 128 feet long, will cost Mr. Meredith, I should think, not less than £130, as he will be obliged to buy all the soil, bones, &c.; but, of course, he will not make the whole width at once. He will, probably, make the border in three four-feet sections, but he will be obliged to make it, and that soon, or spoil his magnificent Vines. I entered this house at the east end, and the first Vine that met my view was a Lady Downe's bearing twenty-two bunches of beautiful Grapes as black as sloes, the bunches averaging 1½ lb. each, and several of them would weigh not less than 2½ lbs. to 3 lbs. What does "G. H." say to the show system of Vine-border making after this?

I find I have omitted to mention that there is a front light to this house which is opened by means of a spindle and lever; the light is 18 inches wide. At the time of my visit there were hanging close to the front lights many bunches of Grapes which reached from the top of the lights to the soil. Mr. Meredith's reason for planting a large number of different kinds of Grapes in this house is, that gentlemen about to plant may select those most suitable to their taste and requirements.

After passing by the Lady Downe's, the next Vine that Mr. Meredith called my attention to was a Barbarossa, this had three bunches, the united weight of which would not be less than 30 lbs. The next Vine, a Lady Downe's, had sixteen fine bunches, and then there was a Barbarossa with three bunches, weighing about 20 lbs. The next that attracted my attention was Child of Hale, with four bunches, the united weight of which would be about 36 lbs.; one of the bunches I should think would weigh 12 lbs.; this measured 16 inches across the shoulders, and 17 inches in length. When standing under it it appeared almost large enough to shelter one from a shower of rain. This bunch was near the top of the Vine, and hung just over the walk, so that I had a good chance of thoroughly examining it.—J. Wills.

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

Dr. Masters, in his second lecture on Plant Architecture on Saturday last, after recapitulating some of the more important heads of his previous discourse, took for his subject the Root, that being the first part which is protruded when the seed begins to germinate, and constituting the basement of the vegetable edifice. After describing the usual manner in which roots are formed, he remarked that adventitious roots, for such is the distinction usually made, may be emitted from almost any part of a plant, and occasionally from the most extraordinary places, as from the fruit of the Cucumber, and mentioned that in France Cacti are occasionally propagated from cuttings of the fruit. Some of the principal modifications of the root were then pointed out, as well as the immediate causes of these. One important use of the root was to fix the plant in the ground, and Dr. Masters remarked any one who had visited Cliveden must have been delighted with the ancient Yew trees growing on a chalk cliff overhanging the river. There the rugged roots not only help the trees themselves, but perform an important office by keeping the chalk from slipping. One reason for roots generally going downwards was that they thus more effectually secure the plant from the wind; but they did not always assume a downward direction, the Mistletoe and Cattleya citrina being given as instances, in fact in the latter the roots actually go upwards. Another most important office of the roots was to serve as a feeding process, and in connection with the fact that they lengthen at their points only, and their consequent power of insinuating themselves into small crevices, the lecturer referred to a plan proposed by an Irish gentleman at the Botanical Congress in May last, of placing drain pipes on stones instead of on soil, with the view of keeping the roots out of the pipes, by tempting them with moisture which would escape from the latter among the stones. The importance of the feeding roots being near the surface was then insisted on, and Dr. Masters observed that he had lately been to Sawbridgeworth, where Mr. Rivers had shown him trees growing most luxuriantly, with their roots rioting near the surface in porous soil charged with manure. Some years ago, when his orchard-house trees in pots were placed on a loose border and little or no surface-dressing was applied, the roots constantly formed spiral coils in the pots, passing out at the bottom and then throwing out fibres; but now that the pots stand on a hard border, and rich surface-dressings are given, the roots no longer become corkscrewed, but form a mass of fibres in the pots. Roots also acted as storehouses of food, their cells being filled with starch or sugar, and often a large amount of water. Here, the lecturer said, he might mention a curious circumstance which had only come to his notice last week. Mr. Barron, the Superintendent at Chiswick, had sent up a number of cuttings to the lecture, and on examining these under the microscope Dr. Masters said he found the callus, or mass of cells formed by the cutting in striking, contained starch, which, no doubt, would become converted into sugar. Hence he concluded that the callus acted as a storehouse of nourishment for the future plant in the same way as the seed and some kinds of roots. After the importance of fibrous roots in transplanting and in fruit-tree culture had been referred to, the Stem was announced as the subject of the next lecture.

ENTOMOLOGICAL SOCIETY'S MEETING.

The first meeting of this Society for the month of March was held on the 4th, the chair being taken by Mr. F. Smith, Vice-President.

A small collection of Beetles and Lepidoptera collected in Madagascar was presented by M. François Pollen, of Leyden. Mr. F. Bond exhibited some specimens of a small species of Ichneumon, of which as many as 447 individuals had emerged in the larva state from the body of a caterpillar of Dasypolia Templi. This caterpillar is an underground feeder; but about the time when it ought to have formed its cocoon and undergone its change to the chrysalis state it crawled above the surface of the earth, and almost simultaneously the entire mass of these parasites burst through the skin in various parts of the body, and each immediately shrouded itself in a small cocoon of its own, leaving only the shrivelled-up skin of the unfortunate caterpillar within which they had been reared. Mr. Bates inquired whether those larvæ which are most subject to be attacked by Ichneumons are especially conspicuous from their peculiar colouring.

Mr. A. R. Wallace requested members to make observations to assist him to a solution of a difficulty connected with the colours of insects. Mr. Darwin had come to the conclusion that, as a rule in nature, brilliant colouring was due to sexual selection; but in opposition to this the brilliant colours of many larvæ, particularly of Lepidoptera, might be adduced. Mr. Wallace suggested that the brilliantly coloured larvæ were those which were distasteful to birds, and it was on this point that he desired to obtain statistics. If this suggestion should prove to be well founded it would afford a solution of the difficulty. Many caterpillars were known to be mimetic, imitating the flowers on which they fed; others were hairy or spiny, and thus obtained protection from their enemies; some were agreeable and others distasteful to birds. But he had observed that a very slight wound was sufficient to kill a growing larva; and if it was seized by a bird, though afterwards rejected as nauseous, its death would nevertheless ensue: consequently the distasteful larvæ required for their preservation something which would distinguish them from those upon which birds delight to prey; and their brilliant colour was such a distinction, and might supply to the distasteful larvæ that protection which to the others was afforded by mimicry or other causes.

The following papers were read:—1, "On the habits of a species of Phasma found in Jamaica," by Mr. C. B. King. 2, "Notes on the Genus Raphidia," by Dr. Hagen. 3, "Description of Damaster anricollis, a new Caribideous insect from Japan;" and 4, "Notes on Dipelicus (Hope), a Genus of Dynastideous Lamellicorn Beetles," both by Mr. C. O. Waterhouse.

The second meeting for the month of March was held on the 18th, Professor Westwood, V.P., in the absence of the President, being in the chair. Amongst the donations announced as received since the preceding meeting were the "Transactions" of the Natural History Society of Lyons; and the first number of a new periodical work, "Insectologie Agricole," devoted to economic entomology, published in Paris. The President announced that the Council of the Society had in contemplation the publication of a general catalogue of British insects, the different orders to be undertaken by gentlemen versed in each; but inasmuch as but little attention had hitherto been paid to the order Diptera, or Two-winged Flies, the members of the Society were recommended to devote some portion of their attention to collecting those insects during the ensuing season, noticing especially the locality and time of capture of each specimen, so as to furnish the Council with facilities for completing that portion of the catalogue.

Mr. F. Smith read a memoir containing descriptions of a number of new species of Ants belonging to the remarkable family Cryptoceridæ, of which he had already published a monograph in the "Transactions" of the Society. The new species now described were natives of Australia, Borneo, Brazil, and Mexico, and many of them are remarkable for their curious forms. The number of known species now amounts to sixty-eight.

The Secretary also read a paper, forwarded to the Society by Capt. T. Hutton from India, "On Species and Varieties," in opposition to the views of Mr. Darwin, and with especial reference to the modification of the species and races of Silkworms and other domesticated species of animals.

PORTRAITS OF PLANTS AND FLOWERS.

Saccolabium giganteum (Gigantic Saccolabium).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. First grown at the Bishop of Winchester's, Farnham, but recently Messrs. Veitch have had it from Rangoon. It was exhibited at one of the Tuesday Meetings of the Royal Horticultural Society, exciting, as well it might, universal admiration. The flowers, which are more agreeably perfumed than those of S. violaceum, continue in beauty for nearly a quarter of a year. As to cul-

tivation, patience rather than skill is required, the main object being to obtain as large specimens as possible, for the racemes of flowers will be large in proportion.—(*Bot. Mag., t.* 5635.)

Cordyline australis (New Zealand Ti-tree).—*Nat. ord.*, Liliaceæ. *Linn.*, Hexandria Monogynia. It is almost hardy in the west of England, and quite so in the Scilly Islands. Slender tree, 12 to 20 feet high; flowers white.—(*Ibid., t.* 5636.)

Tinnea æthiopica (Violet-scented Tinnea).—*Nat. ord.*, Labiatæ. *Linn.*, Didynamia Gymnospermia. Native of Central Africa. Flowers dark carmine, richly scented.—(*Ibid., t.* 5637.)

Dictyopsis Thunbergii (Thunberg's Dictyopsis).—*Nat. ord.*, Smilaceæ. *Linn.*, Hexandria Monogynia. Native of eastern districts of South Africa. Graceful climber; flowers insignificant.—(*Ibid., t.* 5638.)

Dombeya Mastersii (Dr. Masters's Dombeya).—*Nat. ord.*, Sterculiaceæ. *Linn.*, Monadelphia Pentandria. Native of tropical Africa. Flowers white and fragrant.—(*Ibid., t.* 5639.)

Iresine Herbstii aureo-reticulata.—The pale markings on the leaves would be better described as silvery than golden. It is very pretty, but more suitable for table decoration than bedding.—(*Floral Mag., pl.* 333.)

Pelargoniums.—*Milton*, upper petals black, with narrow crimson border; lower petals rose, with darker pencillings. *Negress*, all the petals very deep rich carmine, throat white. Raised by Mr. Foster.—(*Ibid., pl.* 334.)

Lælia albida, *var.* rosea.—White, with petals and lip pink-tipped. Messrs. Backhouse & Son, York, have this Orchid.—(*Ibid., pl.* 335.)

Tapeinotes Carolinæ.—See page 163.—(*Ibid., pl.* 336.)

Cattleya Warscewiczii.—"If we cannot as yet exactly speak of Orchids for the million, we may certainly entertain the notion of Orchids for the many, since it has been discovered that a goodly number of the most charming amongst them—Cattleyas, Lycastes, and Odontoglossums in particular—will grow, aye, and thrive, under what is called 'cool' treatment. Prominent among these Cattleyas is a varied group, which bears the name of the lamented Warscewicz, and which is well represented by the plant selected as our illustration, for which we are indebted to W. Marshall, Esq., of Enfield.

"This Cattleya Warscewiczii is, as we have said, a most variable plant, the imported examples differing in the size, form, and colouring of their flowers, just as a batch of seedling Pelargoniums raised in our greenhouses might vary in these respects. They pass from pure white through every blushing shade to deeply tinted rose, but are all marked by the presence of an orange-coloured blotch on the lip. The blending of colours in some of them is remarkably beautiful. To different forms different names have been given—as Trianæi, rose colour, Wageneri, white, and quadricolor, parti-coloured, but they are all specifically identical, and possibly not even themselves distinct from the better-known Cattleyas, labiata and Mossiæ."—(*Florist and Pomologist*, vi. 69.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

Keep the Dutch hoe in motion during this fine weather, to destroy weeds, and prevent the ground becoming dry and cracked by rapid evaporation. Stir the soil amongst all advancing crops. *Cabbages*, earth up. *Cauliflowers*, water. *Kidney Beans*, sow a few of the Early Negro or Fulmer's Forcing on a warm border, also a number of pots to be placed on a slight hotbed; the plants to be gradually hardened off, and turned out when all danger from frost is over. *Peas* and *Beans*, earth up forward crops, stake if necessary, and make successional sowings of Windsor Beans and of the Marrows and other large Peas. The Victoria Marrow is an excellent Pea, considerably earlier, but not so good a bearer as Knight's Tall and Dwarf Marrows. *Turnips* and *Radishes*, sow on a warm border. If sown in alternate rows, the Radishes will be pulled out of the way of the Turnips. To have the latter juicy and sweet, sow every fortnight till August. The Snowball is an excellent early variety. Follow with the White Dutch, which is the most general favourite in the kitchen. The frames and glasses used for forwarding Cauliflowers, &c., will now be useful for Kidney Beans, Tomatoes, Capsicums, and Cucumbers.

FRUIT GARDEN.

There is no period at which the vegetation of fruit trees is so susceptible of injury from the deprivation of buds or the removal of branches and shoots as the present. No living branch should, therefore, now be touched by the edge of the pruning knife, and disbudding should be commenced with the greatest caution. Except in some particular cases, this operation is not at all advisable whilst the leaf-buds are in the act of breaking. A few of the foreright shoots on the most vigorous branches of Peaches and Nectarines on walls should be first displaced. By frequently going over the trees, and only removing a little at a time, the flow of sap will not be deranged, as would be the case if all or nearly all superfluous shoots were at once removed. Stir the soil at the bottom of the walls, and completely clear away that next the bricks, replacing it with fresh, for broods of insects harbour in such soils and situations. In cold exposed situations plantations of Strawberries made now from plants pricked out last autumn in a sheltered situation, will succeed better if transplanted with balls than if the plantation had been made in the autumn. The ground should previously be well trenched and manured, as no spade ought in future to be inserted amongst them until it is necessary to dig them down. A plantation will stand and produce plentifully many years, if, after bearing every season, the plants are thinned out, so that those left will have their leaves fully exposed to sun and air. Unless for new kinds, there is no method of making fresh plantations comparable to that of turning out plants forced in pots. By this method the Strawberry season can be prolonged until frosty nights set in, and the same plants will produce plentifully in the following June.

FLOWER GARDEN.

Newly-planted trees and shrubs require strict attention in regard to water if they indicate the want of it. It is better to give them a thorough soaking at once, than to afford them a little water frequently, and, after the surface of the ground is dry, fork or hoe it over, and then mulch with short grass to prevent the evaporation of moisture. The same remarks apply to newly-planted annuals, which must be shaded and well watered. In the case of turf which has been recently laid down, after giving it a good soaking of water, dress it over with old tan or leaf mould, and then shade it by covering the ground with pea-sticks or any refuse branches that may be lying about. Put in a successional crop of sweet Peas, and any other annuals that were sown in February. Sow Ten-week Stocks for transplanting. The finer kinds of Gladiolus which have been brought forward in pots may now be planted out in deep, rich, and well-drained soil, but it will be as well to protect with an inverted pot at night until all danger of frost is over. Tulip-beds, &c., should be carefully forked over, and borders that were dug up in the autumn may be lightly forked over now, and all clods broken; it will be much more beneficial than raking them. Plant out Stocks, Rockets, Pinks, &c., in borders or beds.

GREENHOUSE AND CONSERVATORY.

Keep the greenhouse rather close until the plants have sent forth fresh shoots in the new soil, and then expose them gradually to more air. Plants which make their growth in a comparatively low temperature will always endure more hardship than such as are kept too confined and are not so liable to sudden decay. In this, as well as other departments, be particular in watering, and observe that the old balls partake of the moisture. It is best to let plants feel that they just want water, and then to administer a good supply so that every part may be moistened, for if water is given in small quantity the top of the ball is kept too wet while the under roots are suffering. To keep the conservatory now in perfect order you must go over the plants daily, or at least every other day, and take out such as are beginning to decay. Pick off all dying flowers and leaves; also all distorted flower-buds, or, indeed, any small or ill-arranged flowers which do not look well. Every plant at this season ought to be a gem of its kind, or it is not fit to be brought into the conservatory. Some, however, may be useful for cut flowers to fill glasses and for other purposes in the drawing-room. Change the plants often in sitting-rooms, if they are worth preserving afterwards. Roses and all scented flowers that retain their sweetness after drying should be gathered as they begin to fade, and carefully dried at this early season. These, if placed here and there through the rooms, will be better liked by many persons than fresh flowers. Orange trees require particular attention when they are making their young wood. Stop luxuriant shoots at the fourth or fifth joint; no one part of the head should be allowed to grow stronger than the rest. Young trees may require some of their stronger branches to be tied down for a time, which will strengthen the others. Climbers for this house should soon be planted, if additions are to be made this season, and see that the young

growths of the old ones do not become entangled for want of training. Every plant that is intended for a specimen should have the best situation in the greenhouse, and should be turned round two or three times a-week, the shoots should be stopped from time to time, and it should have freedom on all sides. Epacrises and spring-flowering Heaths will bear close pruning after they have done flowering. Correas that have been flowering during the winter should now be rather closely pruned and kept in-doors all the summer, where they will take the place of Fuchsias after September. Luculias that have been at rest since flowering are now beginning to grow again, and should be kept in a low moist atmosphere till the eyes break. Forcing the Luculia at this stage, or even encouraging it to make an early growth, was the principal cause of failure on its first introduction.

STOVE.

The lately-shifted plants will now be making roots, therefore attend to watering, and see that they do not suffer from want of this. Maintain a warm and moist atmosphere, especially during the day, that the growth may be accelerated as much as possible. Shading will also be requisite when the sun shines fiercely, but dispense with it as much as possible, and admit air when the temperature exceeds 90°; but with such a temperature the humidity must be kept up, or the plants will soon suffer in their foliage, and as the foliage of the plants is just as important as the flowers, great attention will be necessary at this critical period; the young leaves are very susceptible of injury, and one half-hour's negligence may place you six months in arrear.

FORCING-PIT.

In many places these pits are now as full as at any former period. The overstocks of duplicates and condemned specimens, parcelled out at potting-time, are put in here to see what flowers or cuttings they may produce before they are finally thrown away. Hedychiums to flower late in the summer may now be started, and another crop of Tuberoses put in for succession. Primula sinensis for flowering in September should now form little stocky plants fit to be planted out in cold frames by the middle of May, and more seeds of it should now be sown. Gesnera zebrina and longiflora, both tall flowers, should now be pushed on by all the heat and moisture at command. As these pits are generally the last places for spring propagation, and as the work does not admit of large portions of air being given, they must be regularly shaded in hot, dry weather: thin bunting or calico should be used for the purpose; mats darken too much.

PITS AND FRAMES.

Proceed with potting-off all plants for bedding-out; those which have been established and hardened may be removed into temporary pits, and covered with mats. Some neat and very convenient permanent structures for protecting plants in small pots may be seen in the nursery of Messrs. Rivers.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

This has been a very busy week as regards out-door work. Sowed in excellent condition a good breadth of *Onions*, and will wait until the seedlings begin to peep up before giving the ground a rolling. In light soil and in such dry weather would have rolled at once. In either case, as soon as the seedlings show above ground it is advisable to run a Dutch hoe between the rows, to cut down young weeds, and prevent the ground cracking; this hoeing to be as shallow as possible, so that the ground may be left firm though having a rough surface. We shall select a poor hard piece of ground merely loosened on the surface, for sowing the Silver-skinned Onion for buttons and pickling. There is often a difficulty in obtaining these small enough in heavy ground—so much so, that it is not uncommon to give large Onions for less than half the bulk of small ones. We have often secured small bulbs by taking the thinnings of the main crop, and laying them in thickly in sandy soil, so that they could grow but little; but these are not so well and flatly formed as those obtained in hungry soil from the Silver-skinned. Transplanted also a piece of winter Onions in rows 1 foot apart and 4 inches asunder in the row, chiefly White Spanish and Tripoli. These were not quite so large as a crowquill, and at that size they generally do admirably transplanted—in fact better than if left where sown in the previous autumn, and where those left will be useful for salads until those sown under protection come in for that purpose. In some places they are relished at table when not larger than good-sized stocking-needles, and for those who like Onions the flavour is said to be very rich when the Onions are of that small size. When used so young frequent sowings are wanted in-doors all the winter. In transplanting Onions the chief consideration is to fasten the roots firmly in the ground without burying any more of the bottom of the stem than can be avoided.

Sowed also Parsnips and Carrots, and will sow more of the latter and Beet, Scorzonera, &c., a fortnight hence. Sowed Pine Apple Beet under protection, to be afterwards transplanted, as for a number of years, even with the precaution of netting, we have not been able to secure a good crop of Beet, nor of Prince's Feather or Love-lies-bleeding in the flower garden, without planting out good-sized plants. The birds here seem determined to nip up each of these coloured plants as soon as the seed-leaves appear.

Peas and Beans.—Sowed more of these, the former generally at good distances apart, with lower crops between, as Potatoes and Cauliflowers. For Peas, we have used some of the cheap 2½-inch-meshed wire netting, 24 inches in height, advertised in our pages, merely bending it in semicircular fashion over the rows, and fastening it at the sides with a few hooked sticks, and as yet neither partridges nor pheasants have looked near the netting; neither of them will be able to push their necks far enough in to reach the Peas. Peas planted out are growing very well.

Cauliflowers under glasses have been finally thinned out to four or five large plants in a light. The glasses were raised considerably to give the plants room, and the soil well mulched with rotten dung, and well watered with manure water. The plants were kept sturdy and hardy all the winter. In the two periods of severe cold attended with snow they were kept covered up with litter until the frost was over; but now in the fine weather we care not how fast they grow, and early Cauliflowers will be acceptable this season. Not a plant has been touched this winter or spring. Last season we had scarcely a plant that was not levelled to the surface of the ground with rats and mice. The vermin have been pretty well thinned since then; but there are no doubt other reasons why vermin commit great ravages at one time and refrain from doing so at another. Ere long these Cauliflowers will be freed from the glasses entirely, the plants bent outwards to give them full room, the ground between used for banking them up well, and then a fair allowance of manure water causes them to head well. Planted out a good piece in the open ground, and, not being sure of the weather, stuck some Laurel branches between the rows. Pricked out a lot sowed on a bed along with Celery.

Cabbages.—Gave a good deep hoeing among the most forward, because we want to encourage tops here instead of bottoms, as in the case of the Onions. With all our care our Cabbages will be but moderately early. We detailed some time ago that of our plantation made in the autumn not one plant was left by midwinter; the rabbits and hares had cleared the piece, though surrounded by twine netting, but which they bit and tore to make their way through. They in their ravages served this good purpose, that a web of galvanised wire netting was placed round this rather open part of the kitchen garden, and no four-footed intruders have found their way in since then, though they have tried very hard at the gates. Our most forward Cabbages, owing to these circumstances, will be from plants much smaller than those planted out, taken up, potted in 60-sized pots, and turned out when the pots were full of roots, the rooting being encouraged under glass. The most forward of these will be little behind those planted in autumn, but of course they have cost more trouble. Planted out a piece of small plants, autumn sown, to succeed these.

Some of our Broccoli has been much injured; even of the hardy Purple Sprouting many plants are killed outright, whilst in the same rows other plants are in great luxuriance, though exposed in every way to the same circumstances during the winter. Our London Coleworts, too, which, after yielding young Cabbages up to the new year, would often have their stumps killed by the frosts after that period, have mostly stood this season, and are well furnished with young sprouts all round the stem. This result is, no doubt, owing partly to the protection they received from the snow.

Took the opportunity of planting a good piece with Potatoes, and would have done more only the ground was moister than

we liked; but if the weather continue dry, we hope to finish this work shortly. Some of our vegetables, even tall Brussels Sprouts and Cottagers' Kale, are so much like bare poles, from being so often picked and gathered from, that though we cannot yet afford to remove them, we mean to dig the ground all over, and plant Potatoes between the rows, leaving spaces for Peas, &c., as the Greens will all be removed by the time the Potatoes are above ground, and the spaces occupied by the Greens can be forked over again. Such means must often be resorted to where much produce must be obtained from little space.

Forced vegetables as in previous weeks' notices. We may merely state in reference to *Sea-kale*, that not having any Sea-kale pots, and not wishing to lift much more, we covered a lot of the most forward with ashes, as we did not wish to use litter, and after placing a cone of ashes over some of the rows farthest advanced, we put on a common garden pot, with a piece of turf over the hole; but before setting the pot on we placed inside of it rough dry hay pressed against the inside of the pot, leaving a hollow space in the centre. The reason for doing this was, that exposed pots, provided they did receive a little warmth in a sunny day, in cold weather and in frosty mornings radiated heat so freely that the inside of the pot was often colder than the external air; and this covering of dry litter, whilst it will permit of the air inside being heated, will prevent its being suddenly cooled, a matter of importance when early cuttings out of doors are wanted, without the help of litter or fermenting material outside. Thus treated we find the plants under some pots will bear cutting ere long, whilst others not so treated are doing little more than showing the buds above ground.

FRUIT GARDEN.

Besides the usual routine of firing, watering, air-giving-thinning, tying, &c., the chief work has been moving Straw, berry plants well set in the Peach-house, where they had the advantage of a roof with an angle of 45°, to pits where they could have a warmer, closer atmosphere to swell the fruit off, and plenty of air to give colour and flavour. They would have swelled admirably in the Peach-house, only that was our best setting place. Placed, also, two rows in the front of the orchard-house, where they did well last year. In placing such plants we remove the greater portion of the old leaves outside, run a pointed stick, or the point of a knife, round the surface soil, shake a little off, and replace with rich compost. As the trusses show there will be plenty of fresh leaves, and the old outside ones take away more than they give, whilst the object at first should be to throw all the vigour possible into the flower-trusses. Some time ago we mentioned that mice had begun on some plants in a frame. They, on the whole, did less damage than we imagined, as in most cases they had cut off the outside leaves and left the centre, so that many of the trusses suffered but little. This is not generally the case, as in most seasons mice nibble the central bud and leave the outer leaves alone.

In the first orchard-house the beauty of the bloom on the trees on the wall, and on trees in pots in front, is beginning to be on the wane, and the setting is proceeding well. In the other house, which we are keeping back, the Peaches and Plums are in full bloom, but except some early Cherries, the bulk of those in pots have not yet opened their buds, though swelling fast. From a few Apricots in this house the blossoms are falling, but a sufficient number seem to be set. The Apricots have always had a little air, even in cold weather. The sun which came so opportunely has rendered us careless this season of wind-boards, brushes, &c., for dispersing the pollen and assisting the setting. One thing here it may be of importance to mention, the roots of the trees against the wall run through the bed on which the trees in pots are placed in front. With the exception of the liquid necessary to keep plants in pots and Lettuces in health in winter, the ground in these houses has been rather dry all the winter, and up to the time of the trees against the back wall swelling their buds. In the severe weather of March we did not like the idea of a wet surface inside the house, but as the milder weather came, and the buds began to open, we gave a good watering to the ground, but at three different times across the house, at a week's interval, doing about one-third of the width next the back wall first, then in about eight days one-third more, and then again that nearest the front. This plan secures moisture for the swelling and setting buds, and prevents too much excitement to the roots at one time, which might tend to throw the buds off. Extra dryness, and extra moisture, are alike prejudicial. It is wise to guard against sudden extremes. The dry surface soil in winter and spring is a great security against frost and extreme cold.

ORNAMENTAL DEPARTMENT.

In-doors the work has been chiefly confined to moving plants, potting, putting up rough-and-ready hotbeds for cuttings, sowing seeds, making preparations for turning lots of bedding plants out under protection, and sowing annuals under a little protection, to be lifted in patches, and transplanted.

Turfing.—Much time was taken up in fresh turfing, which would have been done earlier had the weather permitted, and for which we allowed other work to stand in abeyance, in order to have it done whilst the ground was moderately dry and the weather dry overhead, well knowing that if turf is laid now there is enough of moisture in the ground and in the turf itself to set it growing at once without having to water it afterwards.

Provided the turf is laid down, and moderately beaten and rolled, it may have more beating and rolling after wet at any time. There are a few essentials to good turfing. First, the ground should be made of the requisite level, and moderately firm, and left with a raked surface. Second, the turf should be taken up of as uniform a width as possible, and more especially uniform in thickness, as then there is little necessity for much packing. When not uniform in thickness the turf must be left uniform, either by removing soil or adding fresh as necessary, for if a fine level or regular sweep is aimed at it should never be forgotten that if the turf is not left level no beating or rolling will ever make it thoroughly as it ought to be. Third, when there is a large space of new turfing to do, it is all fair sailing, and the above attended to, it is scarcely possible to go wrong, but when flower or shrubbery beds are to be turfed, and to be left level with the lawn between and beyond, then the beds should not only be levelled and well beaten with heavy mallets, but even then the soil will be so apt to sink in time more than the old lawn, that the fresh turf after being well beaten should be left half an inch or so higher than the old turf, and will then be low enough by midsummer. Where great nicety is required, and the space between the beds is not very wide, it is the best plan to level the beds, take up the turf between, loosen the soil there, beat down as in the beds, and then make all level, and turf all over. This is generally the best and most economical plan in the end; for in all such piecing of turf as is referred to, with the greatest care and practical judgment there will frequently be heights and hollows in the course of six or twelve months, which, though unnoticed by the proprietor and his friends, will be found out by the practical man who looks for them. Fourth, for making a good lawn at once there is no plan equal to turfing. Fine green turf looks best, but the roughest turf well mown previously, and cut so thin, say rather less than an inch, so as to get rid of most of the root weeds, will make a very good lawn in a few months. Fine lawns are made in a longer time by obtaining the best seeds from respectable firms. A sort of compromise is made between the two modes by piecing the ground with rough pieces of turf cut or rather torn apart. To do this best, the ground, after being levelled and made firm, should be rather deeply raked on the surface; the turf is laid, say in pieces of 3 inches square, from 3 to 9 inches apart, but the more rough at the sides the pieces are the better, and as a space is done fine Bents and Dutch Clover are sown thinly in the intermediate spaces, the pieces beaten, and then all rolled. Such piecing will soon make an excellent lawn without sowing, but sowing affords a quicker result.

For immediate effect there is nothing like turfing, and the roughest grass in a park or pasture will, if mowed closely and treated as above, make a most beautiful lawn. We have known cases where new pleasure grounds were made out of park or grass lands, in which the old grass was dug down, the country scoured for turf, and considerable expense incurred for repeated sowings, when the grass sods that were buried, if mowed closely and removed before the necessary levelling, might have been laid down again with the very best results.—R. F.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We understand that Sir Robert Peel, Bart., M.P., has consented to take the chair at the annual festival of this Society, which is to take place on Thursday the 27th of June.

TRADE CATALOGUES RECEIVED.

John Morse, Dursley, Gloucestershire.—*Catalogue of Cuttings.*

Thomas Sampson, Preston Road Nursery, Yeovil, Somerset.—*Catalogue of Bedding Plants and Roses.*

COVENT GARDEN MARKET.—April 10.

The remarks in our last week's report continue to apply to the state of the market generally. Quotations for some articles are rather lower.

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... each	0	6	to 0	3	Leeks ..... bunch	0	3	to 0	4
Asparagus .... bundle	8	0	12	0	Lettuce ..... per doz.	1	0	2	0
Beans, Kidney, per 100	2	0	3	0	Mushrooms .... pottle	2	0	3	0
Scarlet Run, ½ sieve	0	0	0	0	Mustd. & Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions.... per bushel	4	0	5	0
Broccoli ..... bundle	2	0	3	0	Parsley.....per sieve	4	0	6	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsnips ..... doz.	0	9	1	3
Cabbage ..... doz.	2	0	3	0	Peas..... per quart	10	0	0	0
Capsicums..... 100	0	0	0	0	Potatoes ..... bushel	4	0	6	0
Carrots..... bunch	0	6	0	8	Kidney ..... do.	5	0	6	0
Cauliflower ..... doz.	4	0	8	0	Radishes doz. bunches	0	9	1	6
Celery ..... bundle	1	0	2	0	Rhubarb ..... bundle	0	6	1	0
Cucumbers..... each	0	9	2	0	Savoys ..... doz.	3	0	4	0
pickling .... doz.	0	0	0	0	Sea-kale ..... basket	1	0	2	0
Endive ..... doz.	2	0	0	0	Shallots ..... lb.	0	8	0	0
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	5	0	0	0
Garlic ..... lb.	0	8	1	0	Tomatoes.... per doz.	4	0	0	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	6	0	0
Horseradish .. bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0	0

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples .....½ sieve	2	0	to 3	0	Melons..... each	0	0	to 0	0
Apricots ..... doz	0	0	0	0	Nectarines ..... doz.	0	0	0	0
Cherries ..... lb.	0	0	0	0	Oranges 100	5	0	10	0
Chestnuts..... bush.	0	0	0	0	Peaches.....doz.	0	0	0	0
Currants..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	3	0	6	0
Black ..... do.	0	0	0	0	kitchen..... doz.	2	0	4	0
Figs ..... doz.	0	0	0	0	Pine Apples ..... lb.	6	0	10	0
Filberts.....lb.	0	0	0	0	Plums ..... ½ sieve	0	0	0	0
Cobs..... lb.	0	9	1	6	Quinces ..... doz.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Raspberries.....lb.	0	0	0	0
Grapes, Hothouse..lb.	10	0	20	0	Strawberries..... oz.	1	0	2	0
Lemons 100	5	0	10	0	Walnuts..... bush.	10	0	20	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Flowers in Drawing-room (*H. B. J.*).—We cannot possibly tell what book will aid you in keeping up a display of flowers in your drawing-room, unless we know what means you have of cultivating them. The sprig you enclosed is of Deutzia gracilis.

Privet Berries Poisonous (*R. S.*).—There is no doubt that the berries of the Privet (Ligustrum vulgare) are injurious, and to very young children have proved fatal. Last year a child two and a half years old died from eating them. The case is reported in the "Medical Mirror."

Hays's Constant Stove (*Drina*).—One of the stoves would exclude frost in ordinary winters from a house 15 feet by 8 feet, but it would not answer, we think, for propagating purposes.

Slate Tubs for Orange Trees, &c. (*Kit*).—They may be had of Mr. W. Beck, Slate Works, Isleworth.

Back Number.—If "Engworth" wants the first Number (January 2nd), for 1866, and will send me his address, I will send the Number to him.—Henry H. Cave, *Brigg, Lincolnshire.*

Mulberry (*B. P. Bartlett*).—There is no stock for grafting this fruit upon that would hasten its coming into bearing. We have heard of large branches being planted, which rooted and bore fruit long before the trees from small cuttings were productive.

Modes of Vine Training (*J. Bowlby*).—There are some Vines, such as the Golden Hamburgh, that bear best on the young wood; and in other Vines there are circumstances, such as when the roots are deeper than desirable, in which the Vines will bear freely on last year's canes, when they will not bear so freely if closely cut back on the spur system. In ordinary cases in spur-pruning, when the spurs get away from the stem, the bringing up a fresh shoot from the bottom will permit of the main shoot being replenished and the old one cut away without any break in the house. For instance, if last year's shoot was cut down to 4 feet in length, then the spurs on the old main rod could be cut off for that height; next year a piece more may be denuded of its spurs, and the third year the whole cut off at the bottom. Under this plan the Vine would have no more to do than before. It is a very doubtful point, however, whether a Vine increases in energy in proportion to the limited space it occupies. If your Vines are so young and doing well, we do not see the importance of the fresh-rod system; but we know it is a good plan if carried out. Of course when this one rod is encouraged, fewer laterals are left on the old bearing rod.

Muscat Vine Weak (*An Old Sub.*).—We should think your Muscat Vine is merely righting itself, if the account of the state of the roots, &c., is correct. The energies of the plant were paralysed by cropping too early. We have known Vines bear heavily the second season, but it required years to bring them round. The breeder of horses knows the folly of working a foal too early, and many Vines suffer from having so much to do when young.

Vines Unproductive (*John Baker*).—Unless you have good experience, it is too late to do more with the border this season than make holes to see that there is no stagnant water about the Vines, and encourage these to grow as much as possible during the summer; and as they are so weak, encourage young shoots from the bottom, one from each Vine, so as to cut out the spurred rods next season. In the beginning of October lift and replant the roots in a suitably drained, prepared border, and during the summer you could be preparing the materials.

Ribbon-borders (*Constant Subscriber*).—We answer every communication that reaches us. We have given so many examples of ribbon-borders, that a fancied list of arrangements now would do little good, and even then every correspondent would like his own particular case considered. Your proposed arrangement will do very well—namely, Cerastium, blue Lobelia, yellow Calceolaria; Tom Thumb, Christine, and Scarlet Pelargoniums, the last at back and to be higher, but if you had a white row or white-foliaged Pelargoniums between the two scarlets, such would be more effective than Christine. A purple or a blue, high enough, would also be better than a pink between two scarlets. Some people, however, admire this combination, and much of the interest of the border will depend on the planting, and the heights being suitable. On the latter account we doubt if your dwarf, white-leaved, creeping Cineraria will do as well or be as compact as the Cerastium. In fact, we doubt a little if this creeping plant is a Cineraria at all, and rather think it is an Arctotis, which, however interesting, does not make so good an edging plant as Cerastium.

Gauze for Fruit Protecting (*Old Subscriber*).—Mr. Keane informs us that the shading used extensively for fruit trees is called "Brown's floral shading." It is a gauze of cotton, and is tacked over the fruit trees and left on night and day during the blooming season. It is used by Mr. Grieve, gardener at Culford Hall, Suffolk, and many others, and is sold in pieces at all large London seed establishments.

Asphalt Walks (*T. W.*).—The following is the mode of forming them:—Take two parts of very dry lime rubbish, and one part coal ashes, also very dry, and both sifted fine. In a dry place, on a dry day, mix them, and leave a hole in the middle of the heap, as bricklayers do when making mortar. Into this pour boiling-hot coal tar; mix, and, when as stiff as mortar, put it 3 inches thick where the walk is to be. The ground should be dry, and beaten smooth. Sprinkle over it coarse sand; when cold, pass a light roller over it, and in a few days the walk will be solid and waterproof.

Removing Camellias (*W. S.*).—We would certainly remove the Camellias now if they have not started into growth; but if they have it would be better to defer moving them until the growth is complete, and then perform the operation carefully. There is nothing better for Camellias than a moderately light turfy loam, the turf being pared off 1½ inch thick, that part only being used.

Poinsettia Culture (*A Subscriber, J. B.*).—You should at once place the plants in a temperature of 65° at night, and in a moist atmosphere they will soon start into growth, water being sparingly given. When the shoots are an inch or two long repot the plants in smaller pots, using a compost of equal parts of turfy loam, peat, and leaf mould, and adding sand liberally. Keep them close and shaded for a few days, then place them near the glass, and take out the points of the shoots when these are 3 inches long. Shift the plants into their blooming-pots (they are generally required in small pots), early in June, and if placed in a light and airy situation, and afforded the ordinary treatment of stove plants, they will bloom in autumn. You may take off the shoots when they are about 3 inches long quite close to the stem. Insert them in silver sand, plunge in a hotbed, and cover with a bell-glass; they will be well rooted in six weeks. If then potted off, repotted in July in five-inch pots, and not stopped, they will afford a fine bloom in autumn and winter. They require a position near the glass, a moderate amount of air, a moist growing atmosphere, and copious waterings.

Cutting Down and Grafting Cereus hexagonus (*C. M. Major*).—Now is a good time to cut down the plant, the upper part being left on a shelf for the cut to heal over, and then putting it in sharp sand. This is also a good time to graft the different kinds of Epiphyllum upon the stump; we would use exclusively the kinds of pendent habit, but you may employ any of the trailing kinds of Cereus also—kinds that will best suggest themselves to you.

Early Spring-flowering Plants (*B. B.*).—Hepaticas, double and single blue, single white, double and single red; Primroses, the single and double yellow, double white, lilac, crimson, and purple; Daisy, double crimson, pink, and white, also double crimson with gold-striped leaves, very handsome; Polyanthus, single and double. Of Violets, the single and double blue, Russian varieties, and the lavender blue Neapolitan, the sweetest and best. Draba aizoides and borealis, yellow; Primonaria mollis and officinalis, purple and red; Viola lutea, yellow; Cheiranthus Marshalli and longifolius, brown and yellow; Arabis mollis and mollis variegata, also alpina and its variegated form, all white; Alyssum montanum and saxatile compactum, yellow; Aubrietia deltoidea and purpurea, purple; Orobus veruus, purple; Phlox alpinus Nelsoni, white; P. verna, rose colour. In addition to the above, Tulips, Hyacinths, Crocuses, and Snowdrops, Scilla sibirica, and S. bifolia, Winter Aconite, Narcissus angustifolius, N. juncifolius, and Iris reticulata. The best time to plant all the above where they are to bloom is early in autumn. They may be obtained from any of the principal nurserymen.

Training Roses against a House (*Idem*).—The best material is No. 12 galvanised wire horizontally placed, parallel with the courses of bricks, or about 3½ inches apart.

Bignonia radicans Propagating (*M. C.*).—The plant is readily increased by layers, and by cuttings of the young shoots taken off with a heel, and placed in sand in a mild hotbed. Cuttings of the half-ripened shoots also strike freely in a hotbed. The colours of the flowers vary much with the soil and situation, and there is variety named B. radicans superba, an improvement on the species.

Outside Border of Vinery (*An Amateur*).—Arrange the flowers you mention in your border thus, beginning at the back—Perilla nankinensis, Aurea floribunda Calceolaria, Tom Thumb Pelargonium, Variegated Alyssum, and Lobelia Paxtoni, a row of each. We do not advise you to plant the border, but you say you "have made up your mind" to do so.

Grass on Mortar Rubbish (*Mortar*).—The heap of old mortar rubbish 2 feet deep will not grow grass unless you cover it with soil, for which purpose road scrapings will answer.

Turning Gravel of Carriage Drive (——).—The best plan is to make an opening at one end down to the rough or foundation gravel, if any, and, after picking up the drive, place the top at bottom. All the weeds are thus placed at the bottom and they must perish, but when the gravel is sifted it is clear that some of the former surface must be near the top, and that the liability to weeds is increased. The softness of the part done before the snow is easily accounted for by the wet having gone down among the gravel before the latter had become firm from rolling. It will be all right after the high places have been picked up and put in the hollows, and well rolled.

Wallflowers, Carnations, and Pinks Destroyed (*Idem*).—Your loss is mainly to be attributed to the taking up of the plants at so late a season, and exposing the roots to the atmosphere. It would have been better done in the end of March or early in April; but old plants are at any time difficult to move. No doubt the severe weather, combined with the moving, is the cause of death. Ours are not in the least injured, except the Wallflowers.

Viola cornuta (*Idem*).—It is more a Violet than a Pansy; both are Violets botanically. Viola cornuta makes a good small bed, but is best as an edging.

Oleanders not Flowering (*W. M. S.*).—The most probable cause of their not flowering is a deficiency of heat. If you were to place them in a vinery at work we think they would expand the buds. You cannot afford them too light a situation, and if you give them that and abundance of water when expanding their flowers and making new growths, there is no fear of their not blooming. They should be kept dry in winter, but not so much so as to affect the foliage. The pots may be set in water when the plants are growing vigorously.

Azaleas from Grafts or Cuttings (*Inquirer*).—It is incorrect to say a fine Azalea plant cannot be obtained from a cutting. We have had many, and, in fact, most of the plants exhibited are from cuttings. The only advantage in grafting is, that a plant is obtained sooner, and is of freer growth.

Estimate of Coal (*Waste Not, Want Not*).—We do not perceive any mistake, only it now occurs to us that we did not take the cinders into account, which, from what you say now, would be almost sufficient for the heating of your glass structures. The amount of coal we named was that which we knew to be consumed in a similar establishment.

Mistletoe (*Charley*).—We think it would grow in almost any part of Ireland. It will grow on the Crab, Apple, Thorn, Lime, Poplar, and Oak, and is occasionally found on the Pear. It is seldom that Violets come double from seed, but they do occasionally.

Names of Plants (*South Croydon*).—The Salvia is probably fulgens, but the corolla alone is insufficient to distinguish it from some others. The Cytisus with a terminal raceme of flowers is C. stenopetalus; the other C. canariensis. Genista differs from Cytisus in usually having 1-foliolate leaves, and in the calyx. Coronilla differs from both in the jointed pod and one free stamen; in Genista and Cytisus the stamens are all united into a tube. (*Wellwisher, M. H.*).—1, Senebiera didyma; 2, Salsola Kali. (*B. P. J.*).—1, Eriostemon hispidulum; 2, E. intermedium. (*H. O. T.*).—Begonia natalensis. (*Sevenoaks*).—We cannot venture to name your plant from the leaves only, as there are several with similar ones. (*R. F.*).—Burchellia capensis. (*A Subscriber*).—Petunia nyctaginiflora; 1, Erica propendens; 2, Erica. (*W.*).—Justicia carnea. (*J. W. Burbidge*).—It is Vanda tricolor. The drawing is faithful, and with a little instruction you would draw flowers successfully. Of the communication we have no recollection. We never notice the rejected.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 9th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 3	30.215	30.097	64	45	48	45	N.W.	.00	Fine; very fine throughout.
Thurs. 4	29.857	29.792	59	40	49	46	N.W.	.02	Cloudy; boisterous and showery; fine at night.
Fri. .. 5	30.033	29.945	62	40	50	46	W.	.01	Slight haze; very fine, with dry air; very fine.
Sat. .. 6	29.992	29.979	62	45	50	46	W.	.00	Overcast; cloudy; fine at night.
Sun... 7	29.972	29.644	58	40	50	47	S.W.	.02	Cloudy; overcast; densely overcast at night.
Mon... 8	29.527	29.331	53	33	50	47	S.W.	.14	Cloudy; boisterous with rain; very boisterous at night.
Tues.. 9	29.755	29.545	59	29	50	47	N.W.	.02	Cold and boisterous; fine; thunder, vivid lightning, and some hail.
Mean	29.907	29.762	59.57	39.71	49.57	46.23	..	0.21	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BREEDING DARK BRAHMA POOTRAS.

The letters of "Nemo" on this subject have been most interesting, and I desire to thank him for them. I have so often, perhaps too often, intruded my ideas in your columns on my favourite breed, that I fear I may be trespassing on space, but as every editor has a refuge for the slighted contribution, I must only say, if so, consign me "to that bourne from which no" manuscript "returns."

Mr. Fowler is as old an exhibitor of Brahmas as I am, perhaps a year or two older. I cannot exactly see why he thinks I should disagree with his notion of a good Brahma. I have always striven to make colour less essential than some appear disposed to make it; yet if I have a preference, it is certainly for the silver-grey ground in the hen, and I have no objection to a whitish throat, though I prefer the breast well pencilled. As to the cocks, we are perfectly agreed. I greatly prefer the spotted breast. I dislike exceedingly the bronzing of the wing, so frequently seen, and although I should prefer the thighs black, yet I should not discard a cock that had some white there, if otherwise good.

I believe that this grey colour in the hens is far less likely to pass into the reddish brown with age, than is the darker colour now more sought after. I think I may say, therefore, that as regards colour Mr. Fowler and I should be quite agreed.

The best colour, the most brilliant pencilling, the neatest combs, cannot, in my humble opinion, make amends for failure in other points. "Nemo" has remarked that the distinctive points are the pea comb and the feathered leg. I recollect the early days of Brahmas, so of course does Miss E. Watts, as her's were amongst the earliest birds; her's were always pea-combed; but many others, and notably Dr. Gwynne, of Sandbach, preferred and retained the single comb. Mr. Sheehan again had the single comb in his yards, and a cockerel I purchased of M. Garbanati, which came from that strain, had a single comb—nay there was a judge, possibly dead now, as I never see his name, who would not look at the pea comb, and who passed over two pens of my own at the Hereford Show simply because they were pea-combed.

The pea comb or triple comb, now considered a necessary adjunct to Brahmas, is not, however, peculiar to them. One of the neatest I ever saw belonged to a mongrel, and often as in my rides I saw this bird I coveted the comb for transplantation. I think, however, before I had ever seen the pea comb on a Brahma, I had seen it on a cross between the Spanish and Cochin. It does seem very strange that the cross between two single-combed breeds should produce the pea comb, but in a sitting of these cross-bred eggs that I hatched before I kept Brahmas, seven or eight chickens had good pea combs. My memory also seems to say that in the old "Poultry Chronicle" some correspondent had also noticed this; he went further, thinking in those early days to settle the Brahmas for ever, he suggested that their pea comb was derived from some cross. I have also seen capital pea combs on otherwise good Malay birds.

I may sum up my own ideas about the combs thus—I like them small, firm, free from twist, and the grain of the skin fine, but I do not think the points of the comb nearly so essential as the leg.

Before the introduction of the Cochin and Brahma no large breed of fowls having feathered legs and covered hocks was known. These two points distinguished them from all others. I am not so certain that the feathered middle toe is not a later addition, but it is welcome; from the hock downward to the foot, the feathering cannot be too profuse and ought to be heavy, especially just below the hock. Again the thigh must be fluffy, and these soft fluffy feathers ought to curl round and hide the joint from view when looked at posteriorly. I am not going to enter on the vulture-hock question. I have been taken in your pages as an advocate of the extreme hock—this is quite a mistake. If the feathers are soft, and curling round the joint, I should not object to an inch projection, but the essential point is the joint must be covered. No Brahma can be true that has this naked, and I would myself disqualify a bird, however good, if it failed in this essential. This fault

would be certainly attended by a poorly feathered shank. "Nemo" in his paper on crossea refers the poorly-feathered leg to Dorking blood. I can hardly agree with him; the feathering can be made and easily made as heavy as ever, but the fifth toe is persistent in a wonderful manner, and is far oftener seen than even the cruel expression which I certainly have myself noticed as often an attendant on Dorking blood. Another symptom of Dorking taint is the length of the tail; this would always arouse my suspicions.

Whilst at combs and hocks let me bestow a word on "Falcon," and his suggestion that the stiff hock feathers should be removed in the same way as the Game cocks are dubbed. I may be, perhaps, considered as eccentric as "Falcon" if I say that I think there is much force in his remarks. For what purpose is dubbing the Game cock still permitted? Clearly only for the sake of appearances. It is ridiculous to reply that Game cocks must be shown as if ready to fight. Were this correct various other dubbings ought also to take place, and these certainly would extinguish any prize-taking in the exhibition pen. Recollect that in dubbing the Game cock a most faulty comb may be actually got rid of, a comb that would disqualify for prize-taking. Now if merely for the sake of improving the appearance of the "Coq d'Angleterre" we still permit dubbing, why should we, for the sake of appearances, refuse far less painful performances in other breeds?

These thoughts had already been running through my mind when early in this year I was amused by the virtuous indignation of your reporter at one of the northern shows, where some threads were discovered in the comb of an otherwise first-rate Hamburgh cock, and the bird was disqualified. Your reporter in defence of his remarks enlarged on the excessive cruelty, &c., holding up the owner to scorn. Surely there were Game fowls at that show, and on the score of cruelty their owners were much more to blame. I cannot say positively, but it strikes me that to achieve the perfect dubbing I have seen in some of our Game strains, more than one operation must be necessary. If correct in this supposition, Game owners have more sins to answer for on the score of cruelty than the owner of that Hamburgh cock.

Again, the trimming that takes place over the eye at the base of the comb in both Game and Spanish, for the latter in this respect are most extensively trimmed; what is it done for? to improve the appearance. Why should it be legal, for the winking of judges at this practice renders it legal, to pull out objectionable feathers at one part but not at another? Why should the Game and Spanish be improved by art, whilst the Brahma and Cochin must be shown as Nature formed them? Can it be that these latter breeds have more beauties naturally, and, therefore, require no assistance from art?

In conclusion, let me congratulate my Brahma brethren on the position our favourites hold at Bury St. Edmunds. It appears to have excited the splenetic feelings of "Dorking Cock" at "Dorking Castle," but we need care little for that, evidently the poor old fellow has bumble-foot, and, I fancy, too, a touch of the gout in it; perhaps, when he did thrash Brahma in fighting, the latter trod on it—any way a little magnanimity is required to "adorn a throne," and that quality either from the gout or something else "Dorking Cock" appears to be deficient in. He is evidently getting blind also, or he would have noticed that Dorkings are offered Chicken prizes at the Royal Agricultural Show, a compliment paid to no other breed; this renders his remarks quite out of place. "Coq d'Angleterre" is also irate enough, he would knock the Brahma down not for the sake of putting "Dorking Cock" in his place, but evidently he would put himself, the Game, on the throne.—Y. B. A. Z.

A YEAR'S POULTRY-KEEPING.

Looking over my poultry book for last year, I find the profit to have been 6*s*., allowing 5*s*. per pair for Ducks and fowls, and 1*s*. 8*d*. a score for eggs, which, considering the high price of both, I take to be somewhat under the mark, particularly as I consider that for actual weight of flesh two of my fowls are equal to three that I should purchase at the poulterers'. My birds have the run of a good yard, but are entirely dependent upon me for their food, which is given to them twice a-day, and in the morning consists of meal and middlings mixed into a paste with scraps from the house, and in the afternoon of whole barley or wheat, or sometimes oats, whichever I can meet with most conveniently. I have a Cochin cock and fourteen hens, four of them Cochins, two Hamburghs, two Spanish, two Dorkings, and four cross-bred.

Subjoined is my account:—

	Eggs.		Eggs.
January	40	July	78
February	133	August	96
March	109	September	9
April	105	October	0
May	45	November	30
June	44	December	19

	£	s.	d.
Total 708	2	19	0
Seven pair Ducks	1	15	0
Twenty pair fowls	5	0	0
	9	14	0
Grits, corn, meal, and other food	9	8	0

Leaving 6*s*. for my trouble, which I look upon in the light of a pleasure, and so I think would every active healthy lady who once took up the pursuit.—Bedfordshire.

CROSSING GAME FOWLS TO PRODUCE DIFFERENT COLOURS.

To produce Brown Reds.—Put a Black-breasted Red or Ginger Red cock to Dark Grey or Dark Birchen hens. Pile cocks and Red Dun cocks will also produce them with the above-named hens; this cross also throws Duckwings.

To produce Black-breasted Reds.—Put Brown Red, or Ginger Red, Pile, or Red Dun cocks to Duckwing hens. Brown Reds put to Duckwings also make Dark Birchens and Greys.

To produce Duckwings.—Put Dark Grey, Dark Birchen, Mealy Grey, or Yellow Birchen cocks to the Partridge hens. The first-named two will also throw Brown Reds as well.

To produce Piles.—Put White cocks to Red Dun, or Ginger Red, or Partridge and Cinnamon hens.

To produce Dark Greys and Dark Birchens.—Put a Duckwing cock, or Mealy Grey or Yellow Birchen cock to the Brown Red hens, which will produce them best.

To produce Red Duns.—Put a Blue Dun or Dun cock to the Wheaten-coloured or Cinnamon hens of the Black-breasted Reds of that colour. Blue Dun cocks with Duckwing hens make the Birchen Duns.

To produce Brassy-winged Blacks.—Put the Dark Birchen, Yellow Duckwing, or Yellow Birchen cocks to the pure-bred Black hens, or the reverse of this.

To produce Yellow Birchens.—The Yellow Duckwing cock put to Ginger Red hens or Cinnamons does this.

To produce Ginger Reds.—Put Pile cocks to the lightest-coloured Partridge hens of Black-breasted Reds.

To produce Mealy Greys.—Put the White cocks to Dark Grey hens. The lightest Dark Grey hens are the best.

To produce Red Furnaces or Red Mullingars.—Put White cocks to the reddest Red Dun or reddest of the Cinnamon hens. These make Spangled Piles.

To produce Spangles, use Whites, Blacks, and Cinnamons. A White or Cinnamon cock is best.

To produce Polecats.—Use Partridge hens put to White and Black cocks. All three colours are required.

By this it will be seen that the three original wild colours are easily producible by crossing, while Whites, Blue Duns or Duns, Cuckoos, and Blacks can only be produced by occasional, or accidental throws, as the result of domestication.

"Whites, Duns, and Duckwing Greys" mixed, will sometimes throw Cuckoos. Crossing will not make Whites, Duns, or Blacks; but this does not at all prove these colours to be original. All these crosses are, however, certain to produce much inferior birds to the true made or original breeds for a length of time, and are, therefore, undesirable and even foolish, except for the sake of experiments.

Piles are called the most mixed blood of all by some breeders, but this is not always the case, and not so much so as is generally thought.

In breeding and crossing, it must be observed that though the Grey breeds are almost always harder and stronger than their respective Red originals, Dark Greys harder than Brown Reds, and Duckwing Greys than Black-breasted Reds, yet in breeding crosses the red colour is much more powerful than the grey colour, though Red birds are less strong and hard than Greys, and all the Greys incline wonderfully to breed back to the Reds they sprung from, especially in the cocks. I have known Pile cocks (red eyes and white legs), when put to Dark Grey hens, throw good Silver Duckwing Grey cocks

(white legs and yellow pearl eyes). I also know two breeders who both had Black-breasted Red cocks mated with Duckwing hens, both willow-legged, and neither of them could ever obtain a single Duckwing cock chicken, though Duckwing Grey pullets were freely thrown, as were Partridge pullets, but all their cock chickens were Black-breasted Reds. This does not agree with those who assert that Duckwing cocks are easiest thrown from the Black-breasted Red cocks. I have always found that if you want good Duckwings, cocks especially, you must breed from both Duckwing cocks and hens, and not from mixed colours. Duckwing cocks are no more liable to spotted breasts than the Black-breasted Reds are to brown-spotted breasts.

I should have mentioned in the former papers, that good solid corn and peas are far preferable to all sloppy, pulpy-made mixtures as food for Game fowls, as hard corn and peas harden both flesh and feather.—Newmarket.

COMB OF THE BRAHMA POOTRA.

In corroboration of the remarks upon combs, contained in the very able communications of your correspondents "Nemo" and Miss E. Watts, I would observe that out of eighty-three Brahma cockerels reared by me in 1866, I have only one with a perfect comb, and to test the judge's knowledge and observance of its comparative scarcity, I exhibited the bird only once, when he was not even mentioned. He is rather a small bird, of beautiful colour, hackle well defined, and short legs not very well feathered. Thus you will see that with many good points, and one not to be surpassed—his comb—he appears to be unfit for exhibition.

As "Nemo" truly observes, there is no fowl bred with a characteristic so peculiarly distinctive as the perfect triple or pea comb of the Brahma. I endeavoured for several years successively to produce, by all manner of crossings, a Brahma, and although I managed to select from the results some fine specimens very nearly approaching the required type, yet the total absence of the triple comb, together with other points, led me to give up further attempts as hopeless, as I am persuaded we cannot produce the true and perfect triple comb with any variety we have knowledge of. The great scarcity of birds with perfect combs should induce judges to give way in some other and less characteristic points; for instance, I would overlook a poorly-feathered shank, or a wing not barred in the Dark variety, or a leggy bird proportionately heavy. Either of these points I would willingly sacrifice to a perfect-combed bird of fair average merit.—F. C.

HATCHING BY AN INCUBATOR.

The following are replies to the questions put by "Tudor," page 238.

1. Chickens hatched in the *dry* heat of an incubator would not be equal to those hatched under a hen. The incubator is imperfect if provision is not made for the production of a moist temperature. Chickens hatched in a dry temperature will never be so strong as those hatched with moisture, besides which numbers of them will, at maturity, die in the shell. An incubator I had, which was imperfect in this respect, I remedied by keeping in the egg-drawer several pieces of moistened sponge.

2. Chickens hatched artificially, provided a moist atmosphere is maintained, will, without doubt, be as strong in constitution and as sound in feather as those hatched by natural means. In the rearing without a hen there is a great advantage, the chicks thriving very much better, owing to their eating more, and becoming in a very short time independent.

3. Artificial hatching will not in any way interfere with correct colour of feather.—E. A. S.

WIGTON POULTRY AND PIGEON SHOW.

Although from the fact of this meeting being held at the same time as the Accrington Show (April 3rd—5th), the number of entries was not so great as usual, the quality of the birds exhibited was praiseworthy, and the general management all that could be desired. The district around Wigton has long been noted for the excellence of its *Game* fowls, and the specimens exhibited by local breeders fully maintained its high repute, although, as the event proved, the two cups given respectively for the best Game cock and best Game cockerel, the competition for which was open to all comers, were both secured by Mr. James Fletcher, of Stoneclough, near Manchester. It is very rarely indeed that two such extraordinarily perfect specimens are shown at the same time by one individual. They were Black-breasted Reds, true as could be wished for as to colour, and their condition such as reflected great credit on the feeder. These two beautiful birds were to the majority of visitors the chief attraction of the Show. Some remarkably good Brown Reds were also shown by local amateurs. The *Spanish* and *Dorkings* were both good, as were the *Cochin-Chinas*. Of *Hamburghs*, the Spangled were decidedly superior to the Pencilled. Strange to say, the class for Any other variety of fowls could only boast of a single entry, and that was for Dark Brahmas. Some very good Black *Bantams* and Silver-laced Sebrights were also shown.

In the class for Any other variety of *Ducks*, a pair of Shell Ducks was exhibited by Mr. Armstrong, of Aikhead, in remarkably good condition. This is, perhaps, in no slight degree attributable to the extraordinary fact that these lovely birds enjoy, as the owner informs us, almost unrestricted liberty, though pinioned. The drake has now been in the owner's possession for seven or eight years, and goes almost daily down to the seacoast to feed and wash; but sometimes it has absented itself for days together, and in one instance for so long a period as three weeks, yet it returned with the same willingness and freedom as before, much to the satisfaction of its proprietor. Mr. Harrison, of Hull, exhibited a pair of capital Mandarins in this class.

In the *Pigeon* classes were to be found some first-rate Carriers, Ice Pigeons, Owls, Hyacinths, and Turbits.

Wigton is noted for its show of Eggs, as very liberal prizes are offered both for Ducks' and for hens' eggs. They are exhibited in dishes containing a dozen each, and a very severe competition ensued. The twelve largest hens' eggs weighed 2½ lbs., and the largest dozen Ducks' eggs weighed 3 lbs. 5 ozs. The Arbitrator very properly excluded "double-yolked" eggs from competition, as being, unquestionably, malformations; and his discrimination in the first selection of such eggs was openly tested in the presence of the Committee, two dishes of hens' eggs and one of Ducks' eggs being disqualified on this account only. Three eggs having been chosen, a small aperture was made on one side of each of these eggs, fully exposing the double yolk to all visitors who might inspect them during the time the Show remained open; in all three cases the eggs proved exactly as the Arbitrator had predicted.

Game (Black-breasted and other Reds).—First, J. Banow, jun., Bradley Field. Second, T. Manduell, Aikhead.

Game (White and Piled).—First, J. Brough, Carlisle. Second, W. J. Mellor, Colwick Rectory, Nottingham.

Game.—First, T. Dyson, Halifax. Second, J. Brough.

Game (Any colour).—*Pullets.*—First, E. Aykroyd, Bradford. Second, W. J. Mellor.

Spanish.—First, J. Thresh, Bradford. Second, J. H. Wilson, St. Bees.

Dorking.—First, J. H. Wilson. Second and Highly Commended, Messrs. Gunson & Jefferson, Whitehaven.

Cochin-China (Any variety).—First, Messrs. Gunson & Jefferson (Buff). Second, Miss Aglionby, Esthwaite Lodge (Partridge). Highly Commended, Miss Aglionby (Buff); Gunson & Jefferson (Buff).

Hamburghs (Golden-spangled).—First, J. H. Wilson. Second, R. Dickson, Selkirk. Highly Commended, S. & R. Ashton, Mottram, Cheshire. Commended, Messrs. Bowman & Fearon, Whitehaven; S. H. Stott, Quarry Hill, Rochdale.

Hamburghs (Silver-spangled).—First, J. Brough, Carlisle. Second, S. E. Noble, Strickland Gate, Kendal.

Hamburghs (Gold and Silver-spangled).—First, Messrs. Bowman and Fearon (Silver). Second, R. Burrows, Longtown (Golden).

Any other Variety.—Prize, Messrs. Bowman & Fearon (Dark Brahma Pootra).

Game Bantams (Black-breasted and other Reds).—First, W. Mahon, Castle Gate, Jedburgh. Second, H. Snowden, Great Horton, Bradford. Highly Commended, M. Taylor, jun., Penrith (Black-breasted); D. Ashworth, Blackledge, Halifax.

Game Bantams (Any other colour).—First, W. Mahon (Duckwing). Second, Miss Aglionby (Piled). Highly Commended, J. Sword, Jedburgh (Duckwing); G. McMillan, Jedburgh.

Bantams (Any other variety).—First, H. Snowden (Blacks). Second, T. C. Harrison, Hull (Laced). Commended, S. & R. Ashton (Silver-laced).

Ducks (Aylesbury).—First, Messrs. Bowman & Fearon. Second, E. Leech, Rochdale. Highly Commended, J. S. Fair, Gilliestoogues, Jedburgh.

Ducks (Rouen).—First, E. Leech. Second, Messrs. Gunson & Jefferson. Highly Commended, S. H. Stott; M. Redhead, Kendal.

Ducks (Any other variety).—First, J. M. Armstrong, Aikhead (Shell Ducks). Second, T. C. Harrison (Mandarins). Highly Commended, R. Beaty, Bleunerhasset (Muscovy).

PIGEONS.

Carriers.—First, H. Yardley, Birmingham. Second, J. & W. Towerson. Egremont.

Tumblers.—First, A. Parry, Rochdale. Second, H. Yardley. Highly Commended, R. Thompson, Mercsdale Hall.

Pouters.—Prize, H. Yardley.

Fantails.—First, H. Yardley. Second, W. Gate, Wigton.

Jacobins.—First, J. & W. Towerson. Second, R. Thompson. Highly Commended, H. Yardley.

Nuns.—First, R. Davidson, Jedburgh. Second, W. Stordy, Thrustonfield. Commended, H. Yardley.

Barbs.—First, H. Yardley. Second, R. Thompson.

Turbits.—First, E. G. Jones, Parton. Second, R. Thompson. Highly Commended, J. W. C. Dugdale; H. Yardley; J. & W. Towerson. Commended, R. Davidson.

Owls.—First, J. Fielding, jun. Second, J. & W. Towerson. Highly Commended, J. Fielding, jun.; J. W. C. Dugdale. Commended, H. Yardley.

Any other Variety.—First and Second, H. Yardley (Ice Pigeons, and Spots). Highly Commended, J. W. C. Dugdale (Red Magpies); J. & W. Towerson (Blue Swallows).

Selling Class (Any variety).—First, H. Yardley (Hyacinths). Second, S. & R. Ashton (Black Carriers). Commended, J. W. C. Dugdale (Red Barbs).

EXTRA PRIZES.

Game.—*Cock.*—First and Cup, J. Fletcher, Stoneclough. Second and County, J. Brough. Third, W. J. Mellor. Commended, W. Boyes, Beverley; J. H. Wilson; J. Blough. *Cockerel.*—First and Cup, J. Fletcher. Second, J. Banow, jun. Third, J. H. Wilson. Highly Commended, J. Brough; D. Gellatly, Meigle.

Game (County only).—*Cock.*—First, J. Brough. Second, T. Robinson, Wigton. Highly Commended, J. Brough. *Cockerel.*—First, J. H. Wilson. Second, J. Brough. Highly Commended, J. Gibson, Whinnow, near Wigton.

Selling Class.—First, J. H. Wilson (Spanish). Second, R. Burrows, Longtown (Golden-pencilled Hamburghs). Third, M. Redhead (Silver-spangled Hamburghs).

Edward Hewitt, Esq., of Sparkbrook, near Birmingham, officiated as Judge.

ACCRINGTON POULTRY SHOW.

This took place on the 4th and 5th inst. The following are the prizes awarded :—

Game Cock (Any colour).—First and Second, C. W. Brierley, Middleton. Third, J. Foulds, Burnley. Highly Commended, R. Scirminger, Lutterworth; C. W. Brierley. Commended, S. Matthews, Stowmarket; C. W. Brierley. *Within four miles of Accrington.*—First, G. Furness, Woodnook. Second, T. Sharples. Third, R. Bateson, Accrington.

Game (Black or Brown Reds).—First, R. Scirminger. Second, A. Akroyd, Bradford. Third, C. W. Brierley.

Game (Any other variety).—First, C. W. Brierley. Second, T. Dyson, Halifax (Duckwing). Third, R. Scirminger.

Dorking (Any colour).—First, W. Moorhouse, Read Hall, Read (Grey). Second, H. Beldon, Goitstock, Bingley. Third, W. Harvey, Sheffield (Coloured). Highly Commended, D. Parsons, Preston; T. Rogers, St. Helens; W. Parr, Patricroft, Manchester. Commended, T. Briden, Earby, near Skipton.

Cochin-China (Buff or Cinnamon).—First and Third, W. A. Taylor, Manchester. Second, C. W. Brierley. Highly Commended, H. Belden. Commended, J. H. Davies, Birmingham; C. W. Brierley.

Cochin-China (Any other variety).—First, J. Bury, Eccles (Partridge). Second, T. Bott, Bury (Partridge Cochins). Third, H. Crossley, Broomfield, Halifax (Partridge). Highly Commended, C. W. Brierley (Partridge Cochins); Rev. F. Taylor, Kirby Lonsdale (White). Commended, C. W. Brierley (Partridge Cochins); T. Bott (Partridge Cochins).

Spanish (Black).—First, J. Thresh, Bradford. Second, H. Beldon. Third, Miss E. Beldon. Highly Commended, J. Merchant, Halifax; Hon. — Douglas Pennant, Penrhyn Castle, Bangor.

Brahma Pootra (Any colour).—First, H. Lacy, Hebden Bridge. Second, W. Hargreaves, Bacup. Third, T. Pomfret, Hoghton Lane (Dark Brahmas). Highly Commended, Mrs. T. Hargreaves, Berkshire (Dark); M. Brooksbank, Manchester; T. Pomfret (Dark Brahmas).

Hamburgh (Golden-pencilled).—First, S. Smith, Northowram, Halifax. Second and Third, T. Wrigley, jun., Tonge, Middleton.

Hamburgh (Silver-pencilled).—First, H. Pickles, jun., Earby, near Skipton. Second, H. Beldon. Highly Commended, E. Hindle, Accrington; J. Platt, Dean. Commended, W. M. Mann, Kendal, Westmoreland; H. Smith, Morton Banks, Keighley; W. Lawrenson, Eaglescliffe, Yarm.

Hamburgh (Golden-spangled).—Second, H. Beldon. Third, W. Driver, Keighley. Highly Commended, T. Walker, Denton, near Manchester. Commended, H. Pickles, jun.

Hamburgh (Silver-spangled).—Cup and First, A. K. Wood, King's Mill, near Derby. Second, J. Smalley. Third, H. Beldon. Highly Commended, Miss E. Beldon; J. Fielding, Rossendale; J. A. Taylor, Manchester. Commended, E. Collinge, Boarshaw Clough, Middleton; J. Fielding.

Poland (Any colour).—First, H. Beldon. Second, S. Farrington, Chatmoss, near Manchester (White-crested Polands). Third, Miss E. Beldon. Highly Commended, C. W. Brierley; W. Harvey (Golden Polands).

Any other Variety.—First, J. Munn, Fern Hill, near Stacksteads (Black Hamburghs). Second, R. Loft, Woodmansey, Beverley (White Sultans). Third, Col. Stuart Wortley, Grove End, London (Crève Cœurs). Highly Commended, C. Sedgwick, Ryddlesden Hall (Black Hamburghs); Miss E. A. Whittaker, Hawkshead, Windermere (Cuckoo). Commended, Mrs. Whitaker, Vicarage, Whalley (Creve Cœur).

Selling Class (Any variety not above 20s. per Pen).—First, J. Thompson, Bingley. Second, Miss E. Beldon. Third, Hon. — Douglas Pennant. Highly Commended, G. Furness (Black East Indian).

Game Bantam Cock (Any colour).—First and Third, R. Scirminger. Second, C. W. Brierley. Highly Commended, C. W. Brierley; F. J. Astbury, Prestwich, Manchester; J. Crossland, jun., Wakefield (Black Red).

Game Bantam Cock (Within four miles of Accrington).—First, Messrs. W. & H. Buckley, Accrington. Second, G. Birtwistle, Haslingden. Third, H. Smalley, Stanhill, Oswaldtwistle (Black Red).

Game Bantam (Any colour).—First, J. Rhodes, Thornes, Wakefield. (Black Red). Second, J. Haworth, Clough End, near Haslingden (Brown Red). Third, J. H. Davies (Black Red).

Bantams (Any other variety).—First, W. A. Taylor (Black). Second, Miss E. Beldon. Third, T. C. Harrison, Beverley Road, Hull.

Turkeys.—First, E. Leech, Rochdale. Second, Rev. W. J. Mellor, Colwick Rectory, Notts. Highly Commended, Mrs. A. Guy, Eaton, Grantham, Cambridge; S. H. Stott, Quarry Hill, Rochdale (Cambridge Turkeys). Commended, W. Harvey.

Geese.—First, E. Leech. Second, J. Cooper, Rawtenstall. Highly Commended, J. Hubbersty, Longridge; T. Houlker, Revidge, Blackburn; S. H. Stott.

Ducks (Aylesbury).—First, Mrs. M. Seamons, Aylesbury, Bucks. Second, E. Leech.

Ducks (Rouen).—First, E. Leech. Second, T. Bett, Bury.

Ducks (Any other variety).—First, T. C. Harrison. Second, C. W. Brierley. Highly Commended, W. Harvey; T. C. Harrison. Commended, D. Parsons, Preston (Brown Call); H. Beldon (Call.)

PIGEONS.

Carriers.—First, E. E. M. Royds, Greenhill, Rochdale (Black). Second and Highly Commended, J. Hawley, Bingley, Yorkshire (Black).

Tumblers.—First, J. Hawley. Second, J. Fielding, Rochdale. Highly Commended, W. J. Corbridge, Blackburn (Black Mottled); H. Yardley, Birmingham; J. Hawley. Commended, T. Kenyon, Accrington (Black Mottled).

Barbs.—First, A. Dove, York (Yellow). Second, J. Bromiley, Tong Moor, near Bolton (Black).

Owls.—First and Second, J. Fielding. Highly Commended, W. P. Wilding, Mountford, near Burnley (White).

Pouters or Choppers.—First, H. Yardley. Second and Highly Commended, E. E. M. Royds.

Fantails.—First, A. Parry, Rochdale (Blue). Second, T. H. Hawley. Highly Commended, H. Yardley; A. Parry, Rochdale (White).

Turbits.—First, J. Thompson. Second, L. Glassey, Rochdale.

Dragons.—First, A. Parry. Second, A. Lowe, Over Hulton, near Bolton.

Trumpeters.—Prize, J. Thompson.

Any other Variety.—First, F. Wait, Sparkbrook, Birmingham (German Toy). Second, W. J. Corbridge, Blackburn (Red Jacobins). Commended, J. H. Hawley.

Pigeons of any Variety, Within four miles of Accrington.—First and Second, T. Kenyon, Accrington.

Judges.—*Poultry and Pigeons:* Mr. Richard Teehay, Fulwood, Preston; Mr. W. B. Tegetmeier, Muswell Hill, London.

NEW BOOK.

Pigeons, their Structure, Habits, and Varieties. By W. B. Tegetmeier and Harrison Weir.

The first part of this work, under the title above given, and not under that by which it has for several weeks been advertised—viz., "The Pigeon Book," appeared on the 1st of this month. This alteration of title is well, as Mr. Brent's work is known to all fanciers throughout Great Britain and Ireland as "The Pigeon Book."

I confess to a little disappointment with this first part, still it is but Part I.; yet there is a proverb, "Well begun is half done." I have for years been an admirer of the fruits of Mr. Harrison Weir's pencil, and am still in the various periodicals which each month find their way into my house; but surely he has not here done himself nor the Pigeons full justice. There are four pictures, a pair of Turbits and a pair of Jacobins on one leaf, and a pair of Nuns and a pair of Swallows on another. Some of these pictures have the appearance of having been sketched from caged birds, indeed as if on the last day of a long show. The pair of Turbits are the best, but somehow one does not obtain any notion of the exquisite softness of feather possessed by the living birds. Besides, why has Mr. Harrison Weir represented Turbits with turned crowns? The old English birds never had them; they are but German innovations, and are therefore disliked by the best authorities. Indeed, I think the turned or point crown spoils the head of the Turbit as much as it does that of the Barb. Next come a pair of Jacobins—birds full of misery, apparently just washed, and the weather cold. Their eyes are looking round the corner, and I am sure they would like to have their hoods pulled on further, indeed a more moping pair of birds I never saw; next a pair of Nuns, the lower bird crouching uncomfortably. Lastly there is a pair of "Swallows," and why Swallows? I hoped in this new work on Pigeons this bird would be called "The Tern," or at any rate "The Sea Swallow." The Magpie Pigeon comes up to its name, but the word "Swallow" conveys a false idea. These birds, too, have turn-crowns, to which individually I object, as they cause them less to resemble that bird from which they take their name. Mr. Harrison Weir's pencil has for years given me much pleasure; and I trust that in the future parts of this work we shall have Pigeons not only from life, but full of life, and therefore more pleasing.

As to Mr. Tegetmeier's part, there are twenty pages in all. Chapter I., on "The Structure and General Character of Pigeons," from its subject must almost necessarily be dull. There is, however, an interesting quotation two pages long from the Duke of Argyll's "Reign of Law," and another of a page and a half long from John Hunter. Chapter II., "The Rock Dove," is made up entirely of quotations. In the first place there is an extract from "Macgillivray's British Birds," six pages long; then immediately there follows one from Mr. Henry D. Graham, two pages and a half in length.

When Mr. Tegetmeier gets fairly into his subject I hope we shall not only have what is true, but also what is new.—Wiltshire Rector.

Bagster's Process of Melting Honeycombs.—The combs are placed in a conical earthen vessel filled with a mixture of

1 oz. of nitric acid to a quart of water. This is set over an open fire and stirred till the combs are completely melted, when it is removed from the fire and allowed to cool gradually. The product is divided into three layers, the upper one pure wax, the lowest chiefly impurities, and the middle containing sufficient wax to be added to the next melting. A marketable wax is thus obtained at a single operation, without straining or pressing.—(*American Bee Journal.*)

PROPAGATING LIGURIANS.

The first step towards the multiplication of Ligurians is, of course, the obtaining a stock of bees with a pure queen; and, as the purity of the original queen is of such essential importance that unless it is secure all future proceedings can only end in disappointment, no precaution should be neglected in endeavouring to attain this end. I should, therefore, advise no one to purchase a Ligurian stock of which the vendor will not guarantee the purity of the queen, whilst it is of at least equal importance to buy only from those whose known character and standing among apiarians are such as to give weight to their guarantee.

This indispensable preliminary being secured, most persons will probably expect to be at once enabled to propagate the pure Italian race—at least, I know that I did so, and it took some time, and a considerable amount of rather unpalatable experience to undeceive me. It is true, that if the Ligurian stock be so exceptionally strong in early spring as to breed drones well in advance of every black stock within a radius of from three to four miles, and young queens can be reared before any black drones are produced, the queens will stand a good chance of obtaining pure impregnation. Although, singularly enough, I was so fortunate as to attain this result with the first queen I ever reared, subsequent experience has satisfied me that success in the first attempt with only one Italian colony is so rare, that it is far better to devote the first season to furnishing every stock in the apiary with a Ligurian queen, multiplying the queens at the same time as far as may be deemed desirable, but paying little or no heed to the character of their impregnation. For reasons which need not be entered upon here, but which have been already specified by me in discussing the subject of parthenogenesis in the honey bee, all these queens, although they may, and most of them probably will, breed a mixed worker progeny, will in the next and succeeding years breed only pure Italian drones, by the multitude of which the chances of a true impregnation will in the ensuing season be so much increased that the purity of the majority of young queens of the second year is not improbable; whilst if care be taken to keep all the stocks well up to the mark, success in the case of early-bred queens becomes nearly certain. During this second season, therefore, all doubtful queens of the first year should be weeded out and replaced by those of the current year.

Queens may also be bred in the autumn, and when all black drones have disappeared can scarcely fail of true impregnation, if a sufficient number of Italian drones can be preserved and the weather be warm enough.* For this purpose the usual drone massacre may be deferred almost indefinitely in one or more stocks by removing the queens. It is in this case necessary also to destroy or remove any young princesses that may be raised, since not only will all drones be speedily destroyed in the event of a princess becoming fecundated, but the workers sometimes become so impatient of their presence under such circumstances, that a partial, or possibly an entire, massacre may take place even before the juvenile monarch has been able to avail herself of their services.

I should advise every one who intends propagating Ligurians to provide himself with several nucleus-boxes, fitted for the accommodation of "nuclei," as small artificial swarms have been not inaptly designated. Those which I use are made of three-quarter-inch wood, 14½ inches long, by 6½ inches wide and 9 inches deep, which will accommodate four frames, although in practice I seldom put more than three combs in each.

In order to stock a nucleus-box and raise a queen therein, I commence during the middle of a fine day by looking over the combs of a pure Italian stock until I find the queen on one of them. This comb, with the queen, is then put carefully on one side, so that her majesty may not be jeopardised or interfered with in any way, whilst another comb is selected containing worker brood in all stages, from the egg to the sealed nymph, which, with the adhering bees, is put in the nucleus-box, into which the bees from two other combs are rapidly swept with a strong feather. Two spare combs being placed one on either side of the brood-comb, the bees must be confined by the top of the box being covered by perforated zinc instead of the crown-board, whilst the entrance is closed by the same material, and the nucleus should then be conveyed to a dark cellar, there to remain until evening. After dusk it must be placed in the position it is intended to occupy in the apiary, the bees set at liberty,* the crown-board put in its place, and all made snug for the night. A great rush usually ensues, but few will take wing in the dark; and although most of the involuntary truants may return to their home in the morning, so many young bees that have never taken flight, and consequently know not their way back, must perforce remain that the brood will probably be well covered and royal cells will appear in due course. All this must not, however, be left to chance; but an examination of the nucleus should be made in the forenoon of the third day, when, if the population be too scanty, it must be recruited by brushing into it the bees from one or more combs of the parent stock, the same preliminary precautions being of course taken to insure the safety of the queen.

If the Italian stock be strong, and the vacancy can be at once supplied by a comb of black worker brood, the abstraction of bees will scarcely be missed, and may be repeated, and a nucleus stocked, if required, nearly every other day in the height of the season; but every comb of black brood should be marked with the day of the month on which it was inserted, and not employed for breeding Italian queens, until—say twelve days afterwards. If combs of black worker brood are unattainable, the place of those abstracted should be occupied by empty worker combs, which will rapidly be filled with eggs; but if no worker comb be attainable, the remaining combs must be brought together and the vacancy left on one side.

Cases may, of course, arise in which the pure Italian stock is so exceptionally weak as not to bear the loss of either brood-combs or bees; but even in such instances proceedings need not be delayed long after breeding has fairly commenced, but may be so conducted as to add to instead of diminishing the strength of the colony. With this view, every bee should be swept off the selected comb, and its place being at once supplied by a comb of black brood in a more advanced stage, a positive advantage will be at once secured, whilst the requisite population for the nucleus-box may be obtained by brushing into it the bees from three combs lifted out of a black stock for the purpose, care being taken that the queen is not among them.

These little artificial swarms will frequently raise many royal cells. On the ninth or tenth day, all but two of these may be extracted and given to more recently-formed nuclei, which will thereby gain a considerable advantage in point of time. They should be cut out with a triangular bit of comb attached (apex downwards), and inserted in a similarly-shaped hole cut in the brood-comb, which, in this case, may be taken from either a common or the Ligurian colony, the latter being, of course, preferable as a *dernier ressort* in the event of the failure of the inserted royal cells. In all these operations the greatest care should be taken to avoid bruising or chilling the royal embryos, and for this reason they should be conducted as rapidly as possible in the middle of a warm day. Although it might at first sight appear that, by inserting sealed royal cells in the brood-combs at the time of stocking nuclei, trouble would be saved and subsequent operations rendered unnecessary, experience proves that it is better to delay the insertion until a day or two afterwards, when such cells will generally be fixed and accepted by the bees; whereas, if given to them at the time of the first formation of the swarm, they are very apt to be at once torn open and destroyed.

Dzierzon, the great German apiarian, says, "It is an advantage, although not absolutely essential, to add a brood-comb to every artificial swarm or stock in which a young queen has been hatched, since, on account of the increased warmth and activity which will thus be produced in the hive, the juvenile princess will sooner mature for impregnation, will take her wedding-flights earlier, and from the bees being induced to play out in greater numbers she will be enabled to find her hive on her return with greater certainty. Whether young Italian queens are fertilised by Italian drones, especially in the height

* Dzierzon states that a temperature of above 70° is required.

* This is important, as great loss of life often takes place if the liberation be delayed until the next morning.

of summer when both drones and queens fly far from home, must be left to chance. The bee-keeper may, however, do something to further true impregnation by encouraging those stocks which have the most Italian drones, as well as those with young queens, to a simultaneous flight rather early in the day, whilst other drones remain quietly in their hives, which may be done by giving them liquid food either in the ordinary way or by injecting it into the hive."

Having thus endeavoured to convey information on every point that has occurred to me in connection with the multiplication of the Italian variety of honey bee, and having thereby replied to the queries of numerous correspondents, I need only add that I shall be most happy to supply any deficiency that may be pointed out.—A Devonshire Bee-keeper.

PREVENTING SWARMING.

Is there any practicable and easy method of preventing bees from swarming? Two years ago I began bee-keeping for profit, and had a house made capable of holding three stock hives, and two supers on each if requisite; the boxes are of wood, with two glass sides in each, so that I may be able to watch the movements of the bees; the flight-board of the stock hives is all that can be seen on the outside of the house, which is under lock and key. After all my care and attention I find myself up to the present time debtor to cash.

The difficulty which I cannot master is this, when I see my bees likely to swarm I place a super on in hopes of retaining the workers by increase of room, but to no purpose, for it appears that when all is ready off they go. I still leave the super on, hoping that as a further increase takes place the super may be filled with honey, but no, they seem to prefer taking themselves off with their new sovereign, and the super, the access to which is through three holes, each 2 inches in diameter, remains empty; thus the season passes over, and leaves me minus of honey. Some will perhaps say you must destroy the young queens as they are hatched, and the evil will be remedied. That is easier said than done, especially in a stock hive. The queen may be captured while swarming, or after the swarm is taken, and the bees will return to the hive only to wait further orders; but all that is attended with danger and difficulty. But when they fly off, what then?—catch them if I can I suppose. Well, that is the trouble I want to prevent.

At the end of last year I successfully applied chloroform to two small swarms, and joined them with two others; they are now well and strong. I did not find either of the queens.—A Novice.

[No system of management can be depended upon for the absolute prevention of swarming. Sufficient room should be given in good time, and the temperature of the hives carefully attended to whilst the supers are filling, recourse being had to increased shade and ventilation immediately the bees show signs of being oppressed by heat. In spite of all these precautions swarms may issue, and if the combs be fixtures in the hive we deem it better to accept them without further demur. If, however, the combs are moveable, the swarm should be temporarily hived in a common skep; and the young queen, if any, being removed, and all royal cells excised (a task which the deserted condition of the stock hive will render sufficiently easy), the swarm may be returned with every prospect of no further issue taking place until the super be complete, even if the intention to swarm be not altogether frustrated.]

AMERICAN BEE PLANT—Cleome integrifolia.

This plant has been cultivated to some extent in this neighbourhood for several years past, and proves one of the best and probably the very best honey-producing plant known. It was introduced by the writer about the year 1860 as a new annual flowering plant, from the Rocky Mountain region, but its great value was not at that time known and was not discovered until a year or two after, when the writer was surprised to see the plant covered with bees, while other flowers in the immediate neighbourhood were quite neglected. The next year a much larger quantity of this plant was grown, and it was found that the honey stored in boxes at the time that this plant was in bloom was of a much finer quality than any other. Every succeeding year of its cultivation, confirms this, and I find that while this plant is in bloom nearly all other flowers are discarded; even the Buckwheat, which every one knows is a great favourite with the industrious little fellows, is quite deserted. The honey stored from this plant is positively the finest both to the eye and the palate, of any that I ever saw.

The plant is of easy culture and looks well in the flower garden. It is a strong grower, and much branched like the common Mustard plant, though its flowers are a bright purple, and are produced from midsummer until frost destroys it in autumn.

It will grow on any soil, though a rich one suits it best, and may be sown in drills, or broadcast if the ground is clean. Autumn is the best time for sowing as it comes into bloom sooner. It has already acquired the local name of "Bee Plant," in this vicinity (Chicago) and as it is indigenous I propose that we call it the Great American Bee Plant.—H. A. Terry.—(*Prairie Farmer.*)

OUR LETTER BOX.

Hens Eating their Eggs (*B. B.*).—There is no remedy. The remaining eggs should be put under another hen, and the culprit should become soup-meat.

Spanish Cockerel (*A. H. D.*).—The moping and blistered face intimate he has suffered from the long winter, and is only now recovering. While the ground was covered with snow, we did not see our fowls; they kept in-doors and in shelter. Now, when the weather is finer, we ourselves feel more cheerful, and expect to see everything flourishing. Give him bread steeped in strong ale, some lettuce if you have it. If he has no grass, give him some sods, and let him have fresh earth every day. Let him have ground food, no whole corn.

Poultry Runs (*J. S.*).—Cover the surface 3 or 4 inches deep with road drift. Have a heap of ashes and limy rubbish under cover, so that the fowls can have a bath and the raw material of their egg-shells whenever they wish. Ground oats and boiled potatoes in equal proportions form a good diet for all fowls. It would be well to let each variety have a few hours' run in the field daily, rather than one whole day and then miss two.

Fowls Eating each other's Feathers (*An Amateur Poultry Breeder*).—The facts you detail are all indicative of internal irritation in the fowls. Give them no whole corn. Feed chiefly on barleymeal and boiled potatoes; give as much of lettuce leaves as you can; and let there be a heap of dry ashes mixed with some limy rubbish under cover that the fowls can have access to all times. Do not omit the limy rubbish.

White Dorkings (*J. Steven*).—We cannot interfere under the circumstances. Give notice for the post-office order not to be paid, and wait to see if legal proceedings are adopted.

Caponising (*C. E. G.*).—We know of no work upon this cruel and needless practice.

Desirable Fowls (*R. J. H.*).—As eggs, chickens, and good appearance are required, we think you had better adopt Dorkings. They are average layers, good sitters and mothers, and beyond contradiction the best birds for the table. It is necessary they should have a run, and you can give it to them. If you object to this breed you can have Cochins, Brahmas, or Game. We know no others that will suit you so well as one of these, because they each possess all the qualities, while many of the best layers do not sit.

Poultry (*J. R. Beyton*).—We should keep Brahma Pootras in preference to Houdans if having your object in view; but you must not expect to obtain high prices until your stock is noted for prizetaking. Chickens hatched in April will not be old enough for exhibition in July unless very precocious.

Asthma in Canaries (*A Subscriber*).—We should prefer not breeding from a Canary liable to the disease; but if he be mated with a perfectly healthy hen the risk of an asthmatical progeny will be very small.

Aviary.—There was a misprint in our Journal of Thursday last in answer to the inquiries of "Changeable." We said that in an aviary "2 yards square and 1 yard high" fourteen kinds could be kept. It should be 2 yards square and 3 yards high. An aviary of the height we mentioned would not contain fourteen birds for breeding.

Hives (*C. A. Dunn*).—Apply to Messrs. Neighbour & Sons, Regent Street, or to Mr. Pettitt, Hive Manufacturer, Dover.

Flowers for Bees (*Index*).—You may sow Mignonette, Borage, and Melilotus leucantha.

Artificial Swarms—Production of Queens (*J. H.*).—When making an artificial swarm by putting a hive containing a Ligurian brood-comb in the place of a stock of black bees, the Ligurian bees should remain on the comb. Our earliest successful queen was hatched on the 29th of April. Putting a royal cell in a cage when presenting it to a queenless stock, is not only quite unnecessary but is absolutely useless.

Ventilating Hives—Nadirs (*Suffolk Bee-keeper*).—In ventilating hives kept in a bee-house, it is not essential that the air admitted should come from the exterior of the house. We should much prefer supering to any system of nadirs.

Ligurian Bees (*Young Soldier*).—See the observations of "A Devonshire Bee-keeper" in our Journal to-day.

POULTRY MARKET.—April 10.

Good young poultry is very scarce, and meets a ready sale at large prices. Inferior qualities are not in demand, and find a heavy sale.

	s. d.	s. d.		s. d	s. d
Large Fowls	4 0	to 4 6	Pheasants	0 0	to 0 0
Smaller do.	3 6	4 0	Partridges	0 0	0 0
Chickens	2 6	3 0	Grouse	0 0	0 0
Goslings	7 6	8 0	Guinea Fowls	2 6	3 0
Ducklings	3 6	4 0	Rabbits	1 4	1 5
Pigeons	0 8	0 9	Wild do.	0 8	0 9

WEEKLY CALENDAR.

Day of Month	Day of Week	APRIL 18—24, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
18	Th	Meeting of Linnean Society, 8 P.M.	58.8	35.7	47.3	16	1 af 5	58 af 6	35 af 6	0 af 5	○	0 37	108
19	F	Good Friday.	58.8	34.9	46.8	8	59 4	0 7	41 7	26 5	15	0 50	109
20	S	Royal Horticultural Society, Lecture and	60.4	34.8	47.6	14	57 4	2 7	44 8	55 5	16	1 4	110
21	Sun	Easter Sunday. [Promenade, 3 P.M.	59.4	37.2	48.3	14	54 4	3 7	44 9	27 6	17	1 17	111
22	M	Easter Monday.	59.0	37.1	48.1	20	52 4	5 7	41 10	2 7	18	1 29	112
23	Tu	Easter Tuesday.	59.1	36.5	47.8	20	50 4	6 7	32 11	41 7	19	1 41	113
24	W	Meeting of Society of Arts and Micro- [scopical Society, 8 P.M.	58.7	35.6	47.1	15	48 4	8 7	morn.	26 8	20	1 53	114

From observations taken near London during the last forty years, the average day temperature of the week is 59.2°; and its night temperature 36.0°. The greatest heat was 77°, on the 19th, 1854; and the lowest cold 18°, on the 24th, 1854. The greatest fall of rain was 0.60 inch.

CULTURE OF TRICOLOR PELARGONIUMS.

THE present is a good time to propagate and repot this most beautiful class of bedding plants.

Mr. Pearson, of Chilwell, gave some hints on the culture of Variegated Pelargoniums at page 343 of the last volume of this Journal; if he will use the turf soil, such as he recommended in the Number for January 24th of the present year for the growth of Camellias and the formation of Vine borders, he will find that the plants will root very much more freely in it than in the mixture which he recommends. I can fully indorse all that Mr. Pearson has said in favour of using green or partially decayed sods for the cultivation of the Camellia, and, indeed, for almost any kind of plant that will grow in light sandy loam. To keep soil in large stacks for any length of time is a mistake. Before cutting up the sods I have the grass shorn off as closely as possible; the sods are then cut in pieces about 1 foot long, 9 inches wide, and 1½ or 2 inches thick; they are stacked in narrow ridges, and are only allowed to remain stacked long enough to kill a portion of the grass. They are then pulled to pieces, and used at once. For all purposes turf is decidedly much better pulled to pieces than chopped.

I have never had my Tricolor and other Pelargoniums rooting so freely and growing so luxuriantly as they are this season; many of them are now in 8 and 12-inch pots: a description of my mode of treating them may therefore prove interesting to some of the readers of "our Journal." In the first place, the soil which I find most suitable consists of fresh sods cut from a light sandy loam, pulled to pieces, as recommended by Mr. Pearson for Camellias, adding to every barrowful of sods a 32-sized potful of bone-dust. This is the only manure which I mix with the soil, and I find that in it the plants root much more freely than when other manures are used. If the soil is naturally sandy, no sand is mixed with it. After the plants have well filled their pots with roots they are supplied two or three times weekly with manure water in a clear state.

Most of my plants were shaken out in the beginning of January, and potted in small pots in nothing but the sods, no bone-dust or manure of any kind being used. By the end of January they had commenced rooting very freely, and as soon as the roots had reached the sides of the pots the plants were shifted into others of larger size, adding at each shift about 2 inches of soil to the ball, and many of those which were in 60 and 48-sized pots in the last week in January are now in 8, 10, and 12-inch pots. The plants received their last shift only a fortnight ago, and their roots have now reached the sides of the pots, and are rapidly creeping round the ball. Every time the plants were shifted great care was taken to have both the new soil and that in which they were growing in just the same state of moisture, and as nearly as possible of the same temperature. I may also observe that the plants did not require water till the roots had reached the sides of the pots, and to paying particular attention to this, and using proper care in watering newly-potted plants, I attribute a large portion of my success.

The plants are grown in a light house, and near the glass. Before potting see that the pots are clean, especially on the inside. This is a point which should be carefully attended to: for if you put a plant into a dirty pot, when the time comes for shifting it again, on turning it out of the pot it is sure to leave many of its most healthy roots adhering to the old soil. Great care is also necessary in taking the drainage away from the balls not to break or disturb the roots, and after the drainage has been carefully put into the pot, and a portion of soil placed upon it, before the plant is set in the pot, make a little hillock in the centre with some of the most tempting bits of sod, so as to just fit into the place before occupied by the drainage; the roots that were formed around the outside of the drainage will then rest on the sides of the cone formed by the pieces of sod, and the soil can be filled in around the ball without the slightest injury to the roots. The best time to repot is when the roots have just reached the sides of the pots: the plants can then be placed in larger pots without injuring their roots, and these will more readily work into the new soil than if they were allowed to fill the pot before shifting. At the first potting, after the old soil has been shaken from the roots, hold the plant in the left hand and with the right place the soil about its roots, gently shaking the plant all the time so that the soil may be properly settled among them; the soil should not be pressed into the pot until it has been well settled by shaking the plant and tapping the pot on the bench. The same care should also be observed in subsequent pottings.

As soon as the plants have well filled their pots with roots after the last shift, they may be watered every day in hot bright weather. Now that the days are longer and frequent gleams of sunshine appear, the house is shut up early in the afternoon, and the plants have a slight dewing overhead with the syringe; this must, however, be done early, so that the foliage may become dry before night, for Tricolor Pelargoniums are very impatient of moisture on their foliage. I consider the morning the best time to water them at the roots, there is then no danger of an excessive amount of moisture during the night, when the plants should be partly at rest, and if any of them should become dry during the day a skiff from the syringe keeps them from harm till next morning. Of course none of them must be allowed to flag through want of water.

Cuttings of all the most delicate kinds of Tricolor Pelargoniums will strike very readily now in a temperature of 55° or 60°, but they must not be placed in any house where the air is charged with much moisture. If the pots in which the cuttings are inserted are partly plunged where they will have the benefit of a slight bottom heat of 45° or 50° it will cause them to strike much more rapidly, but

care must be taken not to make the soil in which the cuttings are inserted wet. Scarcely any water will be required from the time the cuttings are put in until they are rooted, if they are slightly sprinkled overhead every day, but this sprinkling should not be performed too late in the afternoon. I find the best plan is to strike the cuttings in small thumb-pots, putting one cutting in each pot. The pots should be well drained, the soil pressed in moderately firm, and the cutting should also be made firm in the pot; the best mode of doing so is to make some small hooks, and with them fasten to the soil two of the leaf-stalks of each cutting. It is also important that the base of the cutting should rest flat on the bottom of the hole made by the dibber. An average temperature of 50° or 55°, with all the air that can be given, is the most suitable for this most valuable class of plants.

Since writing the above I have been taking off cuttings from some of my new Tricolor varieties, the greater part of which I believe to be distinct from any at present in cultivation. As it may interest some to know how these beautiful varieties were obtained I will give their pedigree. Several raisers of new Pelargoniums have employed Mrs. Pollock and Sunset as the female parents, and this is the reason of many varieties being so much like the two just named. As soon as these were distributed to the public I obtained plants which were very small, and it was some time before they became strong enough to produce a truss of bloom. They were placed on a shelf in a dry airy place to bring out their colours as much as possible, and to starve them into bloom; the desired effect was soon produced, and the pollen was immediately taken from their tiny flowers and used for fertilising the blooms of Baron Ricasoli, and several of the darkest Zonal kinds amongst my own seedlings. As soon as the seeds were ripe they were sown, and the only seedling I could save from the whole batch that came up with variegated cotyledons—Beauty of Huntroyde—refused to grow, and I was not able to propagate it till last year. This season it grows very freely, and proves to be distinct from anything I have seen amongst Messrs. Henderson's extensive collection. The seeds were gathered from Baron Ricasoli, the flower of which had been fertilised with the pollen of Sunset.

From the same cross many of the seeds came up with yellow cotyledons; Beauty of Oulton was the produce of one of these. All the green seedlings from this cross were saved, and showed no sign of variegation the first year, but early in the following year I observed faint streaks of red and purple on the stems, and as the season advanced these streaks of variegation on the stems of the plants began to develope and extend, and by the end of 1865 they had covered nearly one side of the stem. Early last spring the tops were taken off, and the plants then threw out some splendid sports.

The variety named Lotty Wills is the produce of one of the green plants; this I consider a superb variety, it grows very freely, and remains true to its character. The natural size of the leaf is nearly double the size of the specimens noticed at page 233. This variety has the beautiful colouring of Sunset, but the colours are much more clearly defined; it also has a much stronger habit of growth than Sunset. The same truss of flower produced Beauty of Oulton; this fine variety took more after Baron Ricasoli, it received the yellow ground from Sunset only.

Aurora Borealis is also a sport from the same cross, and is, perhaps, the best Tricolor Pelargonium ever produced. The outline of the leaf is very handsome, the colours round the margin are very distinct, and the centre of the leaf is perfectly green, and most beautifully defined; none of the beautiful colours on the zone and margin of the leaf running into this green portion, so that the plant stands the weather much better than any other variety I have seen.

The other three varieties are from my own seedling Zonals crossed with pollen from Mrs. Pollock; the female parents had very dark zones, one of them was nearly black.

Florence is one of the best sports from this cross; it is unsurpassed for depth of colouring, has a strong vigorous habit, and is very distinct. The plant this variety sported from remained perfectly green up to the summer of 1866.

Of Fanny, the leaves are nearly scarlet when exposed to the full sun in the open air; the foliage is beautiful, circular, and of good substance. This is also a sport.

Of Northern Star, the specimens sent were very small, and not well coloured; it is, however, one of the most beautiful.

The above are a few out of a stock of several hundreds of fine varieties. This should teach those who wish to raise distinct varieties of Pelargoniums not to be too hasty in throwing away their green-leaved seedlings, but to preserve them for at least two years. I have some very promising seedlings from the double Pelargoniums that have been distributed during the last year or two; a description of these and some curious sports shall form the subject of another paper shortly.—J. Wills.

VINES AND VINE BORDERS.

My remarks on the above subject have induced many of your correspondents to join in the discussion. "A Gardener" (page 22), who "thought it was really requisite for some one of experience in the matter to make a few remarks as quickly as possible," treats us to an account of some Vines, which, having all the good things Vines are supposed to care for, acted somewhat in the way your correspondent himself would have done had he feasted for six days off a joint of meat, and found his stomach unequal to the effort of another go in on the Sunday; and so the roots of "A Gardener's" Vines, refusing the food so carefully prepared for them, bored through 6 inches of grouted brick pavement, perforated the subsoil beneath to a depth of 9 feet, and were then, when cut through, found to have a thickness equal to a man's finger! Very extraordinary roots, I admit, for Vines to make in two years; and if "A Gardener" had measured them at their base, where their diameter would have been twice as much as he found it at 12 feet 6 inches from the stem, and given us the circumference of the latter, the account of his Vines and their roots in the second year of their growth would have been complete. The Vines of "A Gardener," with their enormous roots "cribbed, cabined, and confined," in their vault-like structure, will give him good Grapes I have no doubt. They would do the same with one-tenth part of the trouble and expense he declares to be so necessary. Then why incur either the one or the other?

"G. H." (page 117), calls the system Mr. Wills advocates the "show system," and thinks I should be satisfied with a success equal to the cost incurred even if I never took a London prize. This is not a fair statement of the question under discussion. Mr. Wills wants a large supply of fine Grapes for his employer's table, and gives us a good idea of what the cost will be to obtain them. I want a still larger supply of equally fine Grapes for those who choose to buy them, and I gave a candid statement of everything I had done to grow them. I asked Mr. Wills for further details of his arrangements, and desired to know whether my Vines would have grown more if I had incurred greater expense in the planting of them. Mr. Wills is silent on the subject, and so the question of economy *versus* extravagance must remain as it is for the present.

I wish to correct the assertion of "G. H.," that in France "the Vines are cultivated on hill sides, upon terraces, which are formed by bringing down the soil at intervals, thus exposing the rock, or a rough wall built up to support the next terrace to the full sun heat." This is true only to a certain extent. The Vine crop of France, worth £30,000,000 per annum, is not so grown.

"G. H." says "'H. S.' gives us as his idea of Vine temperature the forty-fifth degree of north latitude, with a mean temperature of from 70° to 73°;" and, again, "but I should to make a true calculation, take the mean of the year as 'H. S.' does." When I said that near the forty-fifth degree of north latitude in a mean *summer* temperature of 70° to 73°, Vines grew and produced good fruit without cultivation, I merely mentioned a fact which every gardener ought to be acquainted with.

"G. H." must not think the above temperature is necessarily accompanied by an intense sun heat such as he mentions. The direct rays of the sun have less to do with the growth of plants, and the maturity of their fruits, than is generally imagined. Provided the autumn be warm and dry, there will be no perceptible difference in the fruit of the Oak, whether it be taken from one side of the tree or the other, and Blackberries will be equally large on the north side of a hedge as on the south, and just as good in flavour.

In hot countries vegetation follows the watercourses, and plants of low growth are most luxuriant where partial shade is afforded by neighbouring trees. Climbing plants, as a rule, are fond of shade and moisture, and if a climber be found in the open, it is always a miserable object, unless the rainfall has been excessive. In addition to the shade which plants and trees afford each other when growing in close proximity, the sky is always more or less obscured, and the temperature comparatively low till the leaves become fully developed. Within the

tropics rains and clouds accompany a vertical sun, and then everything starts into growth as if by enchantment. By the time the new shoots have made their terminal buds the rains are falling in other lands, and the sun, no longer vertical, sends his slanting rays from above the distant clouds to warm and dry the air, and finish the growth the rains commenced.

Mr. W. Thomson thinks my question to Mr. Wills about the styptic a very ridiculous one. The original suggestion to use it to the bottoms of Pelargonium cuttings, appeared to me and to others to be equally ridiculous. One unfortunate correspondent has lost the whole of her cuttings in her attempt to imitate Mr. Wills, and yet one would suppose the fingers of a lady were well adapted for so delicate an operation. Gentlemen seeing their gardeners exhibiting their scientific acquirements in the manner suggested by Mr. Wills, would prefer throwing both styptic and Pelargoniums to the limbo of broken pots, for its use in a garden should be an exception and not a rule.

I believe that every one who asks a question is pleased to receive a plain and candid answer. Therefore, I confess that Grapes grown in the open air in the countries I referred to, cannot compete with the best Grapes grown in hothouses in this country, either in size of bunch or berry, but in flavour they often surpass them, and if the crop were limited to a few bunches and these had the care and attention given to the produce of an English hothouse, they would lose nothing by the competition. With equal readiness I admit, that in southern Russia the thermometer does at times go up among the nineties. It does the same in this country. In the month of June, 1845, thermometers at the back of north walls in the Isle of Wight marked 92°. I have had the whole of the skin scorched from my insteps by the power of the sun in a country as far north as Scotland. Such flashes of heat prove nothing, and would be positively injurious in Europe if continued for any length of time.

I have lived on the Continent for years. I have visited French gentlemen in their country homes and know something of their establishments. I am, therefore, able to endorse nearly all Mr. Thomson has said about French hothouse Grapes. They are often inferior to the vineyard Grapes of the south. Horticulture is not encouraged in France as it is in England.

Thus far I have been able to agree with Mr. Thomson, but I deny his assertion, that the vineyards of the Rhine are subject to a higher temperature than he has recommended for hothouses. If it were true it would affect the temperature of the three summer months. The mean summer temperature of Strasburg and Heidelberg is 65°, only 1° more than that of Berlin, and barely 5° more than the mean summer temperature of Dublin.

"What may be termed a temperate climate is that most suitable for its cultivation." Such is Mr. Thomson's statement in the first page of his treatise on the Vine. Is a temperature of from 70° to 95° a temperate climate? Is a moist heat of 100°, which Mr. Thomson now declares to be advantageous to the Vine, to be found in the temperate zone? Do plants within the tropics enjoy such a *chaleur d'enfer*, as this within a few weeks from the commencement of their new growth?

I will put this question of temperature in another form. I have a span-roof house, 100 feet by 16 feet. If I were to divide this house into four compartments for the separate cultivation of plants requiring different temperatures, the compartment having the lowest temperature to be planted with Vines; the next to be filled with Oranges, Lemons, Citrons, and Olives; the third with Date Palms, Sugar Canes, and Pine Apples; and the last with Cocoa-nuts, spices, and Cacao trees —if Mr. Thomson's temperature of 70° to 95° be proper and necessary for my Vines in the first compartment, will he give me an ascending thermic scale of cultivation for my other compartments? Hamburghs do not grow in Fernando Po, nor Muscats in the Caracas.—H. S.

RIVINA LÆVIS CULTURE.

This native of the West Indies was cultivated by Philip Miller more than a century since, yet is not so well known as it deserves, for of fruit-bearing plants adapted for decorating the dinner table I would give the preference to it. The plant produces a great number of elegant drooping racemes, 4 inches in length, of beautiful scarlet berries throughout the autumn, winter, and spring months—indeed, its value cannot be overrated. A shilling packet of seed (which we had true from Messrs. Barr & Sugden), sown in April, will produce plants which will fruit well from the following autumn.

The seed readily vegetates in a Cucumber-frame; and when the plants are about an inch high they should be potted singly in thumb pots. When well established they should be shifted into 32-sized pots, in which they will fruit abundantly. In the following spring, if larger plants are required, they may be shifted into 24-sized pots, in which they will produce an immense number of fruit, which is exceedingly useful for garnishing Grapes and other fruits, and also for mixing amongst cut flowers for vases, &c. A few sprigs mixed amongst white Camellias, white Primulas, and other flowers for bouquets, give a most enchanting appearance.

The soil which the plants require is peat, with a little loam and sand, well blended together, and they may be grown either as standards, pyramids, or bushes. A warm greenhouse or stove suits them best from October till March, and in the summer months they will grow well in a cold pit or in the open air.—John Perkins, *Thornham Gardens, Suffolk.*

ORIGIN OF TRICOLOR PELARGONIUMS.

I have read the letter of your correspondent Mr. Pearson with some interest, as having, like him, been considerably amused by the contents of some of the letters which have from time to time appeared on this subject. I also hope, and I am inclined to think, that on a second thought Mr. Pearson will hardly feel inclined to set me down as a humbug, if, as far as Golden Tricolor Pelargoniums are concerned, I plead guilty to the charge of "having foreseen the probability of our dark-zoned varieties becoming tricolor, and crossed for the express purpose of producing them;" and, what is more, I certainly made no secret of my views on the subject, and should you be kind enough to give this letter a place in your columns, it will in all probability meet the eye of more than one who may recollect having heard me express those opinions, previous to the introduction of Mrs. Pollock, or any other Golden Tricolor Pelargonium.

What suggested the idea to me was simply as follows:—I had observed that by crossing the silver-margined varieties, which were not numerous at that time, with the green-leaved zoned sorts, the result was a per-centage of seedlings with silver margins, and some of them with the addition of a well-defined or pink zone, very pretty when the foliage was in a young state, but nearly disappearing as the leaves advanced in age.

Reasoning from analogy, nothing I think could be more natural than to arrive at this conclusion—viz., that as the union of a zoned with a silver-margined variety was ascertained to produce progeny having pink or red zones, and also silver margins, so the union of a zoned variety with a yellow-margined variety might reasonably be expected to produce progeny having yellow margins, and with zones of more intensity of colour. Knowing, as I did, that the mingling of brown and yellow would produce a red, on the same principle as blue and yellow will produce green, the anticipations of those results led to various experiments being tried, and their realisations are now sufficiently well known; and I believe that it is generally admitted that the introduction of this class of Pelargoniums is a consummation worthy of being wished for.

Some of my friends, I believe, give me credit for being instrumental in their production, others qualify the matter by saying that I did so "quite accidentally," and others say that I had nothing whatever to do with it, but that they produced themselves spontaneously and simultaneously.

If any one will take the trouble to carefully examine a leaf of a heavily-zoned Pelargonium he will find that the change which takes place when that leaf is induced to become variegated is not quite so wonderful as it may at first sight appear to be. The upper surface of the leaf shows, we will suppose, a well-defined zone, or horseshoe, but the under side shows no indication of a zone whatever; and if a leaf be cut into two pieces, the assistance of a magnifying glass will show that the brown colouring matter which constitutes the zone does not extend to the entire thickness of the leaf, but appears somewhat in the form of a coat of dark brown paint resting upon the green tissue of the leaf, and kept as it were in its place by the translucent epidermis which covers the upper surface. Now, when a variety of Pelargonium to which the dark zone is natural can be induced to become variegated or yellow-margined, the natural position or locality of the zone is over the very part where the undulating or irregular junction of the yellow margin and the green disc or centre of the leaf takes place: consequently whatever portion of the yellow margin

happens to lie under the brown zone will, as seen through the transparent epidermis of the upper surface of the leaf, appear quite red, the production of the brown and the yellow colouring matter; while that portion of the zone which may rest upon the green portion of the leaf retains its normal or brown colour to a certain extent, influenced, however, by a certain amount of blending resulting from the contact of the different colouring matters contained in the leaf, and giving to the entire zone, as seen through the transparent epidermis, that rich bronzy shade of colour which in many of the best varieties is so deservedly admired.

It will be observed that my remarks have all referred to what is known as the Golden Tricolor section of Pelargonium, which is essentially distinct from the Silver Tricolor; so much so that all attempts on my part to obtain a cross between the two sections, and combining the properties of both parents, have hitherto failed.

The latter section, although very beautiful when grown under glass, is not so well adapted for bedding in the open air as the Golden Tricolor section, on account of the cupping or crumpling of the foliage, induced, it would appear, by the white or silver margins (possibly from their entire freedom from chlorophyl or green colouring matter), being unable to expand in proportion to the green centres: consequently crumpling is inevitable; but, very fortunately, this objection does not in any degree apply to the yellow-margined varieties, possibly from the circumstance of the margins of their leaves not being entirely destitute of this principle. — P. Grieve, *Culford*.

CAMELLIA CULTURE.

In reading the account of Mr. W. Paul's lecture on spring flowers, I was strongly reminded of an anecdote of the late Duke of Wellington. He was urging one of his military friends to enter parliament, and was answered, that having spent the greater part of his life in the army, and given attention chiefly to military matters, he scarcely felt equal to taking an active part in legislation. "Oh," replied the Duke, "you have only to take care not to speak on subjects with which you are not thoroughly acquainted." Now, no one can doubt that Mr. Paul is an authority when he writes on growing Roses and Hyacinths in pots, but if he grows Camellias according to his own directions, I certainly will take an early opportunity of asking to see them.

To begin with grafting, he says this is usually performed in the autumn; is not the spring a much more natural time to graft? Mine are always grafted in the spring and we do not lose one in twenty, so I shall not change to autumn.

Then, he says, the best soil for Camellias is a rough loamy peat; what sort of a soil this is I am at loss to know. Peat we know, and loam we know, but what is loamy peat? "Loam, a dark-coloured rich mould, principally composed of dissimilar particles of earthy matter, as sand, clay, and carbonate of lime, and vegetable matter in a state of decay, with an occasional mixture of oxide of iron and various salts" (see *Worcester*). Is such a soil ever found naturally in combination with peat? It is impossible, because the acids of the peat would be neutralised by the lime, and I have long thought it absurd to make such mixtures. Make a bed of peat mixed with loam abounding in alkalies, and in a very few years you will hardly find a trace of peat remaining. But, perhaps, Mr. Paul intends to recommend a mixture of loam and peat, a very common and I think a very wrong one. In such a mixture peat is evidently intended to act mechanically to keep the loam open, and for reasons above stated the effect can only be temporary; the result is generally a mass of sour soil in which will be found plenty of brown half-dead roots. There are rich fibrous peat soils which will grow Camellias, and such soils are infinitely to be preferred to mixtures containing peat; but though Camellias in peat often have fine dark foliage, they have not the constitution of plants grown in sandy loam, and I contend that fresh turf cut thinly from a rich sandy loam is the only soil fit for Camellias.

Again, Mr. Paul says the time to pot a Camellia is when it has made its growth, or, rather, when its growth is well matured. Is it possible to give worse advice than this? When a Camellia has made its growth it has also made its roots, and if potted at that time the new soil will be almost entirely unoccupied for twelve months. If, on the contrary, it is potted as soon as it is out of flower the roots will almost immediately reach the pot sides.

Then, we are told to turn the plants out of doors when the growth is matured—that is to say, almost immediately after they have been repotted, and, if they drop their buds, to consider ourselves in fault, as they have had too much water at one time, or too little at another. It must be a wonderful chance if they do retain their buds after such treatment, particularly if they have been subjected "to a high temperature to induce a vigorous growth." Is this the way to grow an evergreen almost as hardy as a common Laurel? Grow it in a hothouse in spring, pot it after it has made its roots in an unnatural soil; turn it out of doors to stand all weathers for some months, and then take it back to the house to bloom! We have been taught that two negatives make a positive, and *perhaps* the result of such treatment may be satisfactory. I should like to see it.

When I was a boy the Camellia-house at Wollaton was the finest sight in this neighbourhood, but the Lord Middleton of that day who had taken great pride in it died, and was succeeded by one who had spent his life on board a man-of-war. He told me himself he did not care for a garden, and the only trees worth planting were Oaks and Walnuts for ships and gun-stocks. One of the first orders the gardener received, was not to waste any more coal on the conservatory. When a very severe frost set in, I believe it was in 1837, this order was rescinded, but it was too late, the pipes were frozen up, and though the beautiful climbers which were trained up the pillars of the house were killed, the Camellias were uninjured. Lord Middleton seeing them flower as well or better than ever, never allowed the house to be heated again whilst he lived, and I never saw such plants as they became. Of course if they had been in pots in place of being planted out, their roots might have suffered. These dark Laurel-like bushes, amongst which you might have hidden a bullock, many of them from 10 to 15 feet high, gave me my first lesson on Camellia-growing.

In conclusion, I would ask you if you have often seen such wood as the branch I have enclosed, from plants grown in peat soil or which have been subjected to a high temperature to induce vigorous growth, a process of wire-drawing it may be called, resulting in long but thin shoots the reverse of vigorous. A healthy plant of Camellia ought never to cast its buds, and such an occurrence is rarely seen here, but then our plants never receive more heat than is necessary to keep out frost, and are never turned out of doors.—J. R. Pearson, *Chilwell*.

[The shoots are uncommonly fine and stout, and the leaves intensely green.—Eds.]

APRICOTS AND STRAWBERRIES IN DORSET.

Mr. Radclyffe has sent to us the following extract from a letter he has received from Blandford:—

"I have, I think, the most astonishing early development of out-door Apricots ever seen. What think you of five hundred Apricots set on one tree, and some of them now (April 8th) as large as a good-sized Walnut? The tree is uncovered, and in all other respects comparatively uncared for."

Mr. Radclyffe adds—"Strawberry plants here look first-rate. The best novelty is Dr. Hogg, and it can be confidently recommended. It is a Queen, very hardy in leaf, healthy, a good cropper, and altogether excellent."

TIME REQUIRED FOR GRAPES RIPENING.

In the Journal for March 14th "H. W." wishes to know if there is a given time to ripen Grapes in. My opinion is that there is not. "H. W." does not say whether he wanted them ripe at any given date. Should he require them at a stated time, then the gardener in charge would have to act accordingly; if no special time is named, the gardener would act on his own judgment. I have had no experience in Jersey myself, but am inclined to think that Grapes in Jersey and in the north will require much the same treatment.

To me the idea of forcing Vines to have ripe Grapes in four months is not in accordance with the general practice of forcing the Vine; besides, at certain seasons of the year such forcing must add considerably to the expense of fuel, to say nothing of the extra labour.

I am satisfied that, accommodating as it is, the more slowly the Vine is forced in accordance with its requirements the better. Quick forcing as a natural consequence, as you justly observe, must produce quick exhaustion. To excite the Vine in an unnatural degree must be highly injurious to its well-being.

I know a place where Vines were forced in sixteen weeks.

The case was as follows :—The owner, being ill, was ordered Grapes, which cost 7s. per lb. The gardener thought it a great price, and resolved to risk the experiment of quick forcing on account of his sick master. Accordingly he put his plan in operation, and in sixteen weeks he had ripe Grapes; but I am very much in doubt whether if the same Vines had undergone the operation again they would not have been rendered worthless. I saw them after they had performed their task, the fruit was far from what it ought to be, and the foliage was foxy, aye, very foxy.—VERITAS.

ROYAL BOTANIC SOCIETY'S SPRING SHOW.

THE second spring Show of this Society took place on Saturday last, but, unfortunately, the weather was such as to prevent a large attendance of visitors, being squally and showery in the forenoon, and though the after part of the day was fair the sky continued threatening till night. The principal features on this occasion were Azaleas, Roses, and Cinerarias; and these, with flowering and fine-foliaged plants, made an effective though not large display.

Of Azaleas there were only two collections in the Nurserymen's Class; these came from Mr. Turner, of Slough, and Messrs. Lane and Son, of Berkhampstead, and were awarded equal first prizes. Mr. Turner's six consisted of excellent examples of Madame Miellez and Louis Von Baden, white; Kinghorni and Perfectieu, rose; Beauty of Reigate, white, with occasional stripes of red; and a union plant, being Etoile de Gand and Variegata superba worked together. Messrs. Lane had Reine des Blanches, Iveryana, and Magnificent, white; Chelseni, orange scarlet; Roi Leopeld, salmon scarlet, and of Sir Charles Napier, a finely-bloomed pyramid about 4 feet high.

In the Amateurs' Class, Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., M.P., was first with Alba Cincta, in the way of Etoile de Gand; Duke of Devonshire, scarlet; Marie Louise, crimson; Stella, beautiful orange scarlet, with violet purple blotches in the upper petals; Broughtoni and Semiduplex, neither of which was sufficiently in bloom. Mr. Wilkie, gardener to J. McHenry, Esq., Oak Lodge, Kensington, was second with Optima, salmon scarlet; Marie Louise, Duchesse Adelaide de Nassau, a dense mass of scarlet blooms; Sinensis, and standard plants of Sir Charles Napier and Mrs. Fry, rosy crimson.

For three Azaleas sent out in 1862, 1863, and 1864, Messrs. Lane were first with the beautiful Stella, Elegantissima, white with occasional stripes of rose, a flower of great substance; and Advance, rosy crimson, heavily spotted in the upper petals. Messrs. Ivery & Son had Flag of Truce, white; Madame Dominique Vervaene, delicate salmon pink, irregularly edged with white, and spotted in the upper petals with crimson; and Souvenir de Pronay, rosy crimson. Mr. Turner had Stella, Prince of Orange, orange red, almost destitute of spots; and Charles Enke, salmon rose, each petal boldly edged with white, and spotted in the upper petals with purplish crimson. Messrs. Ivery were awarded a second prize, Mr. Turner a third. Messrs. Ivery also exhibited several seedlings, the best of which were Enchantress and Princess Alexandra, which respectively received first and second-class certificates. The former is white, slightly flushed and streaked with delicate salmon rose, and spotted in the upper petals with crimson, a fine bold flower; whilst Princess Alexandra is white, mottled and streaked with purplish pink, some of the flowers wholly pink, and in others only some of the petals of that colour.

Roses, though prizes were not offered for them, formed the most striking and attractive feature of the exhibition. Those from Mr. William Paul in particular were remarkable alike for the number, brightness, and freshness of the flowers, and the size and health of the foliage. Among them were noticeable Mdlle. Marie Rody, with two magnificent crimson scarlet flowers, a fine specimen of Glory of Waltham, Fisher Holmes, Senateur Vaisse, Prince of Portia; of rose and pink varieties Madame Anna Alexieff, Madame Rousset, Centifolia rosea, Madame Fillion, Madame Bell, Madame Heste, and Madame Damaizin; and of Noisettes and Tea-scented Celine Forestier and Marquise de Foucault. Messrs. Paul & Son had likewise a collection in fine bloom, among which were excellent examples of Madame Fillion, Lord Clyde, Princess Mary of Cambridge, Fisher Holmes, Exposition de Brie, Général Jacqueminot, Charles Lawson, Madame Victor Verdier, Maréchal Niel, Celine Forestier, and Madame Villermoz. Messrs. Paul & Son also contributed five boxes of beautiful cut blooms, of which Maréchal Niel, Maurice Bernardin, Alphonse Belin, Madame Victor Verdier, and Madame Villermoz, were especially fine. Extra prizes were awarded for all three exhibitions.

Cinerarias though not numerous had a very gay appearance, and those shown by Messrs. Dobson, James, and Fairbairn were in excellent bloom. Conspicuous among Messrs. Dobson's plants, to which a first prize was awarded, was that well-known and beautiful rosy-purple variety, Lord Elgin, almost dazzling in its brightness; among the others were Conqueror, crimson self; Miss Smith, white, broadly edged with violet; Eclipse; and Admiration, white, with a broad rosy-purple edge. The first prize in the Amateurs' Class was awarded to Mr. James, gardener to F. Watson, Esq., Isleworth, for well-bloomed plants of Snowflake, Lord Elgin, Perfection, Charles Dickens, Fair Maid, and William Reeves. The second prize went to Mr. Fairbairn, gardener to the Duke of Northumberland, Sion, who pressed his competitor so closely for first that it was difficult to decide which had the better collection; his plant of William Dobson, a bold crimson self, was admirably bloomed; Creamy White, as well as his other plants were also very good. Mr. August, Beddington, was third. For Beatrice, a seedling raised by Mr. Fairbairn, Messrs. Dobson received a first-class certificate. It is a very large, bold, white flower, conspicuously edged with rosy purple.

Among other subjects were Amaryllises from Mr. Burley, of Bayswater, and Mr. Wilcock, gardener to Dr. Pattison, of St. John's Wood; fine-leaved Begonias from Mr. Marcham, gardener to E. Oates, Esq., Hanwell, and Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., and excellent pots of Lily of the Valley from Mr. Bartlett, who also contributed a dozen admirably-bloomed specimens of Spiræa japonica or barbata. These, though only in 48-pots, measured about 20 inches across at the base, and 16 or 17 inches high, and each bore about a dozen graceful white spikes of bloom. It is surprising that so effective a plant is not more generally grown for decorative purposes at this season, seeing that it is of easy culture.

Of British Ferns Messrs. Ivery, of Dorking, sent as usual the best collection, which included Asplenium trichomanes Moulei, a very pretty slender variety; Asplenium fontanum, Cystopteris fragilis angustata, Blechnum spicant heterophyllum, of which the pale green of the young fronds formed a pretty contrast with the dark hue of the older ones; Ceterach officinarum, Scolopendrium vulgare marginato-cristatum, Polypodiums, Athyrium Filix-fœmina formoso-cristatum, a finely-crested variety with lively green fronds as shown, A. F.-f. thysanotum, A. F.-f. pulchellum, also pretty, and a graceful of Trichomanes radicans. Mr. James, of Isleworth, had the second prize for a collection chiefly consisting of Athyriums and Lastreas.

Prizes were also offered for flowering and fine-foliaged plants, and were taken by Mr. Williams, of Holloway, Mr. Wheeler, and Mr. Wilkie in the order of their names, with collections comprising Cordyline indivisa, Variegated Aloe-leaved Yucca, Crotons, Alocasia metallica, Dicksonia antarctica, Eriostemons, Azaleas, Genetyllis fuchsioides, and Dendrobium nobile. Mr. Williams likewise contributed a collection containing Imantophyllum miniatum, Tetratheca ericæfolia, Berenia pinnata, Trichopilia suavis, and other Orchids, together with a fine specimen of the beautifully-striped Yucca quadricolor, Yucca albo-spica, Ananassa sativa variegata, Todea superba, and Hymenophyllum demissum. Messrs. Lane had a plant of the beautiful hybrid Rhododendron Countess of Haddington, with large trusses of its long-tubed rosy blush flowers; also a plant of Edgeworthii, a Sikkim species with large, campannlate, white flowers.

Of new and rare plants a numerous collection came from Mr. Bull, comprising Litebrochia undulata, Maranta rosco-picta; Habenaria margaritacea, with oblong dark green leaves, blotched with white, a promising addition to variegated Orchids; Iresine Herbstii aureo-reticulata, noticed last week; Tradescantia repens vittata, in which some of the leaves are half green half white, while others are broadly striped; Fittonia argyroneura, beautifully veined with white; Athyrium Goringianum pictum, a beautiful and graceful variegated Fern, with reddish midribs shading off to grey, and clended towards the base of the pinnæ; the Japanese Lastrea varia, with green and bronzy fronds; Polystichum angulare parvissimum, and some others. Mr. Williams, of Holloway, sent the rare Vanda gigantea, with a raceme of its large thick blossoms, golden yellow, with conspicuous cinnamon blotches; also a Strelitzia, with an orange and blackish violet flower; Dracæna sanguinea, with long narrow leaves having red midribs; Lindsæa cultrata; a small yellow and brown-flowered Oncidium, and a by-no-means showy Maxillaria, with numerous small purplish spots on a buff ground. Mr. Wilcock, gardener to Dr. Pattison, St. John's Wood, had two Odontoglossums, one being O. Bluntii, and the other a good variety of luteo-purpureum with nine large flowers. From Mr. Shenton, Barnet, came several varieties of Retinosporas, not, however, of a size that their merits could be judged of; and from Messrs. Perkins, of Coventry, Tricolor Pelargenium Queen Victoria, a pretty variety, which was adjudged a first-class certificate; and Mr. William Paul had a similar award for Red Admiral. Mr. Paul also exhibited several other promising variegated Pelargoniums, and the beautiful new double Scarlet Thorn.

TREATMENT OF PEACH AND NECTARINE TREES.

PLANT if possible trees one-year-trained from the nursery, unless you like two-year trees best. After planting, put some rotten manure over the roots, with soil, and water it in. I like to plant in October or November, and I let the trees grow till May before I cut them back. Should there be any shoot absolutely useless I cut it out, but no more; then nail, as soon as of sufficient length, as much wood as will form a good head. I usually let the wood grow all it can in the spring till the following season—that is, I never cut a shoot from the trees till I prune them, say in the middle of May; then I go over the trees and cut out the useless wood, disbud the wood left for another year, take off the embryo fruit where it is too thick, and then nail in properly. By this management I never miss having a crop of fruit. The reasons I assign for this treatment

are, that by having every piece of wood with its leading shoot, the proper nourishment of the tree never ceases to keep properly distributed, you obtain a crop without any covering to your trees, and you avoid all standing in the cold and hitting your fingers instead of the nails in winter pruning. I have had a crop of fruit for the last twenty years under the above mode of managing the trees.

The six Peaches which I recommend are—Chevreuse, Téton de Venus, Noblesse, Bellegarde or Galande, Walburton Admirable, Grosse Mignonne. The following are also good kinds:—Red Magdalen, Royal George, Vanguard (very often sold for Noblesse), Old Newington, Chancellor. The six Nectarines which I prefer are—Elruge, Red Roman, Brugnon, Violette Hâtive, Pitmaston Orange, Hardwicke.—J. Harris, *Nurseryman.*

ROYAL HORTICULTURAL SOCIETY.

Dr. Masters's Lecture, *April 13th.*—The Stem and Branches formed the subject of this day's lecture, the features distinguishing them from the root were pointed out, and numerous illustrations were given of the various forms which these parts assume. The purposes which the stem serves in the economy of the plant were stated as being to act as a channel of communication between the roots and leaves, to expose the latter to the light and air, to serve as a reservoir of nutriment for the plant, and in some cases to act as a substitute for the leaf. For the support of annual plants a small herbaceous stem was usually sufficient, but for those of longer duration, or which are exposed to the wind, a woody stem or trunk became necessary. The way in which the trunk is formed through the greater energy of the terminal bud, and its more favourable position as compared with the side shoots for receiving nourishment and light, was then explained; and Dr. Masters next showed that the different shapes which trees assume depend on the suppression of some buds, the development of others, the position and arrangement of the latter, and the direction which the resulting shoots assume. In the organs of plants there was the same struggle as that which goes on between plant and plant, when a number are growing together, and the same victory of strong over weak. This struggle exercised a powerful effect on the form and habit of the plant, and climbing plants were instanced as a form in which the leaves are as fully exposed to light and air as if they had a thick trunk and branches.

Dr. Masters next pointed out that the underground portions of the stem, such as tubers, corms, and rhizomes, are distinguished from roots by the habitual production of buds, and serve as reservoirs of nutriment, generally containing starch and other substances available for the growth of the plant. Many subterranean forms of stem, it was then mentioned, could change their position by their growth at one end and decay at the other. Aërial stems likewise served as storehouses, some, as in the case of Cactuses, containing large quantities of water, while in others there were resins, gums, and various peculiar secretions.

The power which the cultivator has of altering the form of plants by pruning, grafting, and other operations was then referred to, as well as the effect of these as regards the formation of wood and the production of fruit. The effect of grafting, and especially that of double-grafting, in promoting the speedy formation of fruit-spurs, was also pointed out, and illustrated by specimens kindly sent by Messrs. Rivers.

Second Spring Show, *April 16th.*—This was an extensive as well as most beautiful Show, lacking but one element to render its success complete, and that was fine weather; for though the two conservatory arcades, which the various subjects fully occupied, and the conservatory itself, were warm, dry, and comfortable, the drizzling rain which continued more or less throughout the day very much diminished the numbers and enjoyment of the visitors. Masses of fine Azaleas and Rhododendrons, and a profusion of Roses constituted the leading features of the display, while mixed collections of flowering and fine-foliaged plants, Cinerarias, Lilies of the Valley, Pelargoniums, and other plants served to give it variety.

In the class for nine Azaleas the only exhibition was that of Messrs. Lane & Son, of Berkhampstead, who had a first prize for Gem, Chelsoni, Advance, Elegantissima, Stella, and finely-bloomed plants of Roi Leopold, Sir Charles Napier, Magnificent, and Iveryana. In the Amateurs' class for six, Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., was first with well-bloomed specimens of Marie Louise, Duke of Devonshire, Stella, Broughtoni, Semi-duplex, and Alba Cincta. Mr. Todman, gardener to R. Hudson, Esq., Clapham Common, was second with smaller plants, but in excellent bloom, the varieties being Duchesse Adelaide de Nassau, very brilliant in colour; Princess Royal, rosy crimson; Roi Leopold, Princess Barthilda, Conciuna, purplish lilac; and The Bride, white. Mr. Wilkie, gardener to J. McHenry, Esq., Kensington, who was third, had Crispiflora, in which the edges of the petals are curled or crisped; Burlingtoni, orange scarlet; Coronata, deep rose; a finely-bloomed standard Sir Charles Napier, and a pyramidal plant of Roi Leopold, covered with bloom. The same exhibitor was first for three plants with Sinensis, Duchesse Adelaide de Nassau, and Marie Vervaene, all three in excellent bloom, and the last, though small, being pure white with a few streaks of red, was very pleasing. Mr. Wheeler was second, and Mr. Todman third. The first prize for the best single specimen was awarded to Mr. Fairbairn, gardener to the Duke of Northumberland, Sion, for a plant of Triumphans, forming a regular cone about 5 feet in height, well covered with flowers. Mr. Turner, Slough, was second with Louise Von Baden, bearing a profusion of its fine large white flowers. Messrs. Lane contributed Reine des Blanches, about 3½ feet high, and Mr. Lydiard, Batheaston, a small plant of Extrani, but in very good bloom.

Of Rhododendrons, Messrs. Lane were the only exhibitors in the class for six, but took a well-merited first prize for Augustum, delicate pink; Nero, dark rosy purple; Illuminator, with large trusses of rose-coloured flowers; Vervaeneanum, semi-double, bluish lilac; Griswoodianum, blush; and Erectum, deep rose—all of them moderate-sized plants, and in excellent bloom. Messrs. Lane also contributed a collection of dwarf standards in small pots, and in fine bloom, though not exceeding a foot in height. The first prize for a single specimen went to Mr. Wilkie, for a fine standard Everestianum, with a head measuring 5 feet or more across; and the second to Messrs. Lane, for Toowardianum, bearing numerous large trusses of its rosy lilac flowers.

Mr. Parker, of Tooting, sent a fine half-standard Countess of Haddington, with a head 3½ feet across, and bearing numerous trusses of its charming rosy blush flowers. Most unfortunately it was too late for competition, otherwise it would doubtless have secured an award. This fine hybrid variety, it will be remembered, was first sent out by Mr. Parker. Mr. Batch sent cut blooms of Rhododendrons grown out of doors at Hafodunos, Denbighshire; likewise blooms of Aucklandii, of course from a house.

Roses and their merits will be fully reported on by "D.," of Deal, and in the meanwhile it will suffice to mention the names of the prize-takers, and a few of the varieties exhibited. The first prize for nine was taken by Mr. Turner, in whose collection we remarked fine examples of Senateur Vaisse, Baron Adolphe de Rothschild, Vicomte Vigier, Charles Lawson very fine, Madame Falcot, and Souvenir de la Malmaison, with numerous beautiful blooms. In that of Mr. W. Paul, who was second, we remarked Victor Verdier, John Hopper, and Madame Villermoz; whilst Messrs. Paul & Son, who were third, had Anna Alexieff beautifully fresh, Charles Lawson, Madame Villermoz, and Alba Rosa. Mr. James, gardener to W. F. Watson, Esq., took a first prize, the only one awarded in the Amateurs' class, with plants in good bloom; and in that for the best single specimen Mr. W. Paul had a like award for Madame Alfred de Rougemont, which, although not large, had about two dozen expanded flowers, white tinged with pink, equally distributed over the plant. Mr. Turner was second.

New Roses of 1865 and 1866 were with some exceptions not seen to the best advantage. Charles Wood, deep velvety crimson; Exposition de Brie, violet shaded crimson; Mdlle. Marie Rody, crimson scarlet; Camille Bernardin, Dr. André, Marguerite de St. Amand, Alba Mutabilis, Charles Rouillard, and Maréchal Niel were some of the most noticeable. The last, of course, now requires no commendation. Mr. W. Paul was first; Mr. Turner, second; Messrs. Paul & Son, third. Extra prizes were also awarded to Mr. W. Paul, and to Messrs. Lane, who each showed numerous collections of pot plants, also to Messrs. Paul & Son for boxes of cut blooms.

Among Cinerarias the most attractive were Miss Smith, Lord Elgin, William Dobson, Lady Theodore Grosvener, blue-edged; and Eclipse, white with a broad rosy purple edge. Messrs. Dobson & Son were first, also receiving an extra prize for twelve well-bloomed plants; Mr. Fairbairn, second; Mr. James, third. The last-named exhibitor also had a first prize for six Calceolarias admirably flowered, and of the same excellent strain as that which he usually exhibits.

Prizes were also offered for Amaryllids. Messrs. Veitch and Mr. Burley, Bayswater, were the only exhibitors, the former being awarded the first prize for their collection, in which Ackermanni pulcherrima, with large, deep scarlet flowers veined with blackish red, and Baumanni grandiflora were conspicuous.

Auriculas, Polyanthuses, and Pansies, will receive special notice at other hands. For Auriculas, Mr. Turner, of Slough, took a first prize in the Nurserymen's class, with beautiful examples of Miss Giddings (Read), Richard Headley (Lightbody), and Mary Ann (Fletcher), Grey-edged; Unique (Dickson), Prince of Wales (Ashton), and Lady Richardson (Gairn), Green-edged; Crucifix (Clegg), Fair Maid (Lightbody), and Pillar of Beauty (Hughes), White-edged; Eliza (Sim), Meteor Flag (Lightbody), and Stadtholder (Gorton), Selfs. Mr. James, who was first in the Amateurs' class, had a good eight, likewise taking a third prize for Alpines. For Polyanthuses, Mr. Wiggins was first, Mr. Turner, second; and for Pansies in pots, Mr. James was first. Good stands of cut blooms from Mr. James and Mr. Hooper, of Bath, also received first and second prizes.

Lily of the Valley, in excellent bloom, from Mr. Reeves, Campden Grove Nursery, Kensington, had a first prize; and Mr. Salter, Hammersmith, was second with beautiful potsful of the variegated sort in fine bloom.

Miscellaneous collections of plants in flower consisted for the most part of subjects which had been exhibited on the previous Saturday at the Regent's Park. Among them were Acacias, Ixoras, Genetyllis, Vincas, Eriostemons, Azaleas, Rhyncospermum jasminoides, Odontoglossums, Vandas, and other Orchids. Mr. Wilkie was first, Mr. Williams second, and Mr. Wheeler third.

Other subjects, for which classes were not provided, consisted of a large and beautiful collection of Chinese and Ghent Azaleas, Rhododendrons, including Countess of Haddington and Dalhousianum, Roses, Deutzias, &c., contributed by Messrs. Lane; a very pretty mixed collection of Tulips, Lily of the Valley, and Spiræa japonica from Mr. Bartlett, of Hammersmith; British Ferns from Mr. James; basketsful of Mrs. Dix and Miss Watson Tricolor Pelargoniums from Mr. Watson, of St. Albans; and many fine varieties of the same class of Pelargoniums from Messrs. E. G. Henderson, who also had the beautiful Silver-leaved Meadow Grass and the pretty Aucuba-leaved Daisy. Mr. Tanton, Epsom Nursery, exhibited a remarkably fine plant of Cyperus alternifolius variegatus; Mr. Wiggins, Isleworth, a fine collection of Cyclamens in 60-sized pots; and from Mr. Earley, Digswell, came a box of cut flowers containing Gardenias, Roses, Cinerarias, Persian Lilacs, Acacias, Begonias, Clianthus, &c., together with flowers of "Trichosanthes cucumerina," like lacework, but of which the correct name is doubtful. For the above exhibitions several extra prizes were awarded, which will be found in the published prize list.

Floral Committee.—A very nice collection of plants was furnished for the inspection of the Committee, and several novelties of various merit were to be found among them. In the exhibitions of the Society, the new plants and florists' seedlings seem always to excite considerable interest. Mr. James Butcher exhibited a seedling Auricula; Messrs. Perkins & Son, Coventry, a seedling Tricolor Zonal Pelargonium, Queen Victoria, which it was requested should be sent again to compare with others. It is decidedly a good variety, and will probably take a good position among its numerous relatives. Messrs. Veitch sent a large and valuable collection of plants, among them Sphærogyne peruviana, a handsome, large-foliaged plant; Coleus Veitchii, from the South Sea Islands, very showy and distinct, the centre of the leaf very dark, with a bright green margin. A first-class certificate was awarded it. Also Dieffenbachia Pearcei, which received a second-class certificate; Panicum variegatum, from the South Sea Islands, with white and red variegation, very distinct, first-class certificate; Hippocyrta brevicalyx, a very curious flowering plant, resembling in foliage Gesnera, and having globular orange flowers, second-class certificate; Franciscea calycina major, with beautiful large lavender flowers; a new species of Nepenthes, which it was requested should be sent again; Primula cortusoides amœna, a beautiful spring-flowering Primrose, quite hardy; Gymnostachyum Pearcei; and the graceful Hotein (Spiræa) japonica, a forced hardy herbaceous plant most useful at this season for decorative purposes. Mr. Bull sent several new Ferns—namely, Lastrea Filix-mas Barnesii, which received a first-class certificate; Athyrium Goringianum pictum, a distinct variegated form, and very beautiful, which also had a first-class certificate; Athyrium Filix-fœmina pulchrum, which had a second-class certificate; Athyrium Filix-fœmina elegans; also Habenaria margaritacea, and Camellia Lavinia Maggi rosea, which was awarded a second-class certificate. This is a sport from Lavinia Maggi, but very inferior in form and beauty.

From Messrs. Dobson, Isleworth, came seedling Cineraria Beatrice, deep white centre, with a magenta margin; second-class certificate. Mr. W. Paul sent seedling Zonal Pelargoniums Rouge et Noir, Prince Silverwing, Red Admiral, Topaz, and Jason, a bright yellow-foliaged variety, which was awarded a first-class certificate. It is fully early to decide upon the merits of these sporting varieties; when planted out of doors their merits will be more fully developed. From the same came also Aucuba japonica ovata, a green-foliaged variety, which had a first-class certificate; Aucuba japonica salicifolia to be seen again; Alnus aurea, a yellow-leaved plant, which received a first-class certificate as being useful for a shrubbery or plantation; and Cratægus oxyacantha coccinea flore pleno, which had a first-class certificate. This is certainly a plant which cannot be over-rated; the intense bright red colour, and the numerous clusters of the double flowers make this Cratægus invaluable; no admirer of this charming family can be without it, all other pink varieties are truly in the shade beside it, beautiful as they all are. Mr. S. Parsons, Turnham Green, had a seedling Azalea Beauty of Fairlawn and Azalea Rival, not equal to well-known named sorts. Mr. S. W. Pilcher, Plaistow, sent seedling Alpine Auricula Emma, deep rosy crimson, with a yellow centre; it was awarded a second-class certificate; also Veronica chamædrys variegata. Mr. Parkes, gardener to G. Cooper, Esq., Old Kent Road, sent a collection of cut Orchids, among them Odontoglossum tulipiferum (?) and Dendrobium thyrsiflorum, also plants in fine bloom of Odontoglossum Alexandræ. A special certificate was awarded for these handsome spikes of flowers. Where were the far-famed, as far advertisements make them so, new Violets? Not even the Czar put in an appearance. Surely if worth anything the new double kinds ought to have been introduced on this occasion to the public. The Pansies were all that could be wished, and some of the finest kinds ever exhibited, but the Violet ought decidedly to have been represented at this meeting, we mean that highly-scented modest flower with nodding head.

Fruit Committee.—Mr. Lydiard, Batheaston, sent a good dish of Alice Maude Strawberry, Lydiard's Improved, Rifleman, and Hedsor Winter Prolific Cucumbers, and a dish of a white seedling Potato, very good for this season. From Mr. Melville, gardener to the Earl of Roseberry, Dalmeny Park, came Melville's Imperial Early Cauliflower Broccoli.

General Meeting.—W. Wilson Saunders, Esq., F.R.S., in the chair. The business was entirely of a formal character. Seven new Fellows were elected, and the St. Mary's Church Cottage Garden Society, and the Spalding Floral and Fruit Society were admitted into union.

SUDDEN DEATH OF PANSIES AND CINERARIAS.

In a former number of your Journal the question "Why Pansies died off suddenly, or some parts of them did so?" was asked. In a recent number the same question is put, touching the sudden death of Cinerarias.

I think I can answer both your correspondents, having, like them, been a sufferer, and in both instances, but, after close inquiry, a discoverer, too, which they do not seem to have been. First of all, let me state a physiological fact—a ring of bark taken off down to the wood of any woody vegetation, tree or plant, if complete, destroys the vitality of the roots and ultimately that of the plant. Further, though scientific men know the fact, society in general does not, nor do all gardeners, that the roots lift, by a special system, the nourishment from the soil for the plant, but do not partake of it themselves while it is in a crude state; the roots, to be healthy, requiring the intervention of bark, the same as the trunk of a tree or plant does. The bark descends in continuation from the stem, however altered in appearance, and by it the sap which the roots lifted up into the tree descends in its improved character. The roots are merely organs of nourishment, and as organs must be kept healthy, or they will not perform their duties to the tree or plant. Roots, as I have before remarked, do not nourish themselves directly, but by means of the sap descending by the stem. If by any chance a complete interruption to the flow of sap is made at the level of the ground, just where the sap-bark begins, by cutting off the bark down to the woody fibre, the roots will infallibly die, the plant following.

With reference to Pansies, Cinerarias, and some other similar plants, dying off, I found a ring of the bark completely eaten away to the woody fibre in each instance. It would appear as if the plant supported itself for a few hours after this result had taken place, by the sap in store, and that the roots in the meanwhile became useless, the plant by the morning dying suddenly, however well it looked overnight. The night being the time when plants draw on their roots most largely, and the leaves giving out most freely their gaseous vapours in the morning—that is the time of our finding a withered plant. (?)

In some cases I thought woodlice barked the plants, and so they do, but they bite here and there, up and down the stem, for half an inch, and do not completely eat away the bark, unless they are very numerous, crowding and poisoning the Pansy root as well as eating it. Wireworms, however, are the worst of all pests in the flower garden. They keep just at the line of junction between the hard bark of the stem of the plant, and the softer bark of the root, and just below the earth one wireworm will thus concealed work away at the bark, entirely encircling the plant, and as surely destroying the roots by cutting off the supply of nourishment these derived from the plant's stem. There is no sure remedy but catching the wireworms, nothing else will be effectual.—M. D.

CHRYSANTHEMUM CULTURE.

The Chrysanthemum is one of our most useful autumnal flowers for greenhouse and conservatory decoration. It comes into beauty when other flowers are scarce, and enlivens our plant-houses at the dullest season of the year. With careful cultivation it may be grown to any size, be trained to any shape, or adapted to almost any purpose.

The plants may be easily increased either by cuttings, suckers, layers, or dividing the roots. I consider the most easy and business-like way, or at least that by which the best foundation is laid for future success, is by cuttings, and as this is the mode I generally adopt I shall treat on it only.

The cuttings are taken from the old plants early in March, or about the middle of that month. This season I took off my first batch of cuttings about the 15th of March. They should be about 3 or 4 inches long, and, the lower leaves being trimmed off, should be cut just below a joint. Three or four cuttings are inserted in a 60-sized or three-inch pot, in a compost con-

sisting of rich turfy loam and leaf mould in equal parts, with a liberal admixture of sharp sand, carefully attaching the name to each variety. The pots are then placed in the propagating-house, plunged to the rim in cocoa-nut fibre; and as the house is glazed with rough plate glass, but little shading is required. The cuttings receive a gentle watering from a fine-rosed watering-pot, so as to check too rapid evaporation when they are deprived of the support of the parent roots, as well as to settle the soil about them. The atmosphere is kept moist, and they receive a gentle bedewing from the syringe on most days. They will strike readily in a Cucumber-frame or in a vinery at work, or, where no better accommodation can be afforded, the cutting-pots may be plunged under hand-lights in the open air. I find that in about a month or five weeks the cuttings begin to grow and the pots to fill with roots.

The plants, for such we must now call them, being rooted, are removed to a situation where they will receive more sun and air; the point of each shoot is nipped out, and they are shifted into six-inch pots. It is important to shift immediately the roots reach the sides of the pots, for if they become cramped in the small pots the well-doing of the plants will be considerably affected. The soil used for this potting is somewhat stronger than that employed for the cuttings. The Chrysanthemum is a luxuriant grower, and delights in a rich compost; with liberal treatment it will reward the cultivator with glossy green foliage, and a profusion of beautiful flowers. I now use a strong turfy loam, with about one-fourth of decomposed vegetable mould, a little charcoal, and a good quantity of decayed cow and sheep dung, the latter put on a hot iron or in an old tin vessel, and placed over a fire for some time to destroy insect life. In this compost the plants will grow freely, and in due time produce a fine display of bloom. They must gradually be hardened off, and, when there is no danger apprehended from frosty nights, should be plunged in a bed of coal ashes out of doors. When handsome specimens are desired, with luxuriant green foliage to the rims of the pots, the plants should be placed at a sufficient distance apart not to interfere with each other, for if the leaves are allowed to intermingle too freely the lower ones turn yellow and become unsightly. Instead of a position facing due south, one with either a south-east or south-west aspect suits them better. When the roots have again reached the sides of the pots I give another shift, at the same time stopping all the shoots to keep them dwarf and compact. About the end of July I give their final shift, using on this occasion 10 or 12-inch pots, according to the size of the plant and the variety about to be potted. At this potting they should be finally stopped, and all the shoots carefully tied out to neat stakes.

During the growing season the plants require copious supplies of water, and they should never be allowed to flag from the time they are removed from the cutting-pots until after blooming. In dry weather they will be greatly refreshed and benefited by a watering overhead once or twice a-day. If it is desired to secure fine heads of bloom and very large flowers, the plants should be supplied with manure water at least twice a-week.

About the beginning of October the plants should be removed into a cool house, where they will be protected from dashing rains and severe frost. The front of a Peach-house is well adapted for this purpose. It is not safe to allow them to remain out of doors late in October, as we are then never secure from frosty nights. Last season many Chrysanthemums were completely destroyed owing to being allowed to remain too long out of doors unprotected. They may be removed into the conservatory or greenhouse as they come into flower.

I have sometimes noticed when the plants have been removed in-doors, that though well set with buds and promising to go on prosperously, yet soon afterwards they have drooped, and many of the buds have died off without coming to perfection. This, I presume, is caused, as a rule, by the roots being allowed to run freely through the holes of the pots into the soil; and from numerous rootlets being broken off on the removal of the pots, the plants are deprived of a vast amount of nourishment, and consequently sustain a check, discoverable by the leaves flagging and the buds withering. This evil may be avoided by moving the pots before the roots run into the soil, and repotting the plants when the pots are filled with roots.

When the blooming season is over the flower-stems may be cut down, and the plants plunged in coal ashes in a cold frame, or in turf pits covered with spare sashes, where they will have slight protection from frost. As Chrysanthemums are nearly hardy but little care in winter is requisite, except occasionally to supply a little water. The old plants may be planted out in the mixed borders, in open places in the shrubberies, or at the foot of walls bounding the flower garden. In the southern counties in favourable seasons I have frequently seen them produce a gorgeous display of bloom.

It is unnecessary for me to advert to the many varieties in cultivation. I would refer all intending purchasers, as well as all interested in the cultivation of this useful flower, to the valuable article by "D.," of Deal, on "Chrysanthemums New and Old," at page 100 of the present volume.—Quintin Read.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Stir the soil frequently among young crops, and destroy weeds as they appear. *Asparagus*, as soon as the young shoots are from 3 to 6 inches high, let the plantations be made. *Broccoli*, let a sowing of all winter and spring sorts be made forthwith. Cape Broccoli and Cauliflower for Michaelmas may, however, be sown a week or two later. *Carrots*, continue to sow successions of the Horn—indeed, sow a bed every month, from January to September. This is the best way to be independent of the grub. *Cucumbers*, the sort for ridges should be forwarded immediately, also *Tomatoes* and *Vegetable Marrows*. *Potatoes*, this is an excellent time to plant a full crop; Kidneys with well-protruded sprouts, or other early kinds, planted now will be a little later than those planted in February. Planting them, however, involves a little care; the sets should be placed in baskets, a single layer thick, on damp litter, and handled as carefully as eggs; they should by no means be planted during either sunshine or wind. See that plenty of *Kale*, *Savoys*, *Brussels Sprouts*, *Leeks*, *Scorzonera*, *Salsafy*, *Beet*, &c., is put in without delay.

FRUIT GARDEN.

Recently-planted fruit trees should be inspected in case they have been loosened by the winds; for although deep planting is not supposed to have been practised, yet the soil should be kept in close contact with the stem, quite as high as the surface level. It is necessary that all fruit-tree borders should be well drained, to prevent the stagnation of water at all times, but with this provision there will be no danger from all the rain entering the borders which falls upon them between this and August, even if it should be abundant. The climate in front of a south wall is an artificial one, chiefly as regards an increased temperature, and with this there is afforded no corresponding increase of moisture. The latter must be supplied by watering, but the less this becomes necessary the better. If the border is smooth, firm, and sloping, heavy rains are carried off by the surface, and lost as regards the roots of the trees: therefore from this time until August, or the period of ripening, keep the surface loose so that rain may enter freely. Weed Strawberry plantations.

FLOWER GARDEN.

Potting and sweeping lawns should now be regularly attended to in suitable weather. Finish off new work, if not already done, without delay. Roll walks to make them firm before dry weather sets in; edge and sweep them after rolling to give them a neat appearance. Any tender Roses that have suffered from the late severe winter, and which are now breaking, should be pruned, but leave such as have not begun to grow until the season has advanced a little. Shrubs should also be looked over in the same manner. Continue sowing annuals wherever required. A thorough re-arrangement of all the herbaceous tribes should take place every spring; if this has not been attended to no time should be lost in carrying it out. Some of the grosser kinds form too large masses in time, and thereby destroy all proportion in the borders and beds.

GREENHOUSE AND CONSERVATORY.

With the advancing season plants of vigorous growth will now be making rapid progress; great attention must therefore be paid to regulating and training the branches. Climbers, in particular, will require to be kept in almost daily subordination. It is a question whether trellises of various fantastic devices are the most appropriate, either for display or convenience. The most simple forms will be found to answer all practical purposes better, and may be in quite as good taste as many of the grotesque trellises in use. This, like all other matters where correct principles of taste are not often brought to bear, is usually overdone. Variety and intricacy, and what is termed originality, are too frequently mistaken for ornament. Nothing can be ornamental, strictly speaking, unless the principles of

design form an essential element in its execution. Plants of shrubby growth will require to be stopped back, so as to give stability to the plants as well as form. This will enable the cultivator to dispense with stakes in a great measure, for after all, stakes are unsightly appendages to exotic plants. Great care should ever be bestowed on watering pot plants. Too much, too little, or an injudicious mode of application are equally fatal to high cultivation. Very many plants are seriously injured at the periods of shifting or "potting off" by improper watering. It has been the fashion to recommend what is termed a thorough soaking to newly-potted stock, and it is to be feared that in this very act the foundation of what is termed sourness is frequently laid. A very fine-rosed watering-pot and slight applications of water, at intervals, soon after potting, are the best means as a general rule to penetrate the mass and to cause the particles of soil so to arrange themselves that the atmospheric influences shall be somewhat modified, but by no means intercepted. There is, however, no good reason why all plants should be watered immediately on shifting them. When a plant has no ball of earth the water should, of course, be made to penetrate the whole mass in order to prevent desiccation, which would sometimes ensue through extreme porosity in the new soil. When, however, the subject is a plant—say a Camellia, with a hard-wedged ball, a steeping overhead in water for an hour is a preferable course. After this, frequent syringings or waterings with a fine rose will be the soundest policy for a week or two afterwards. See that no plant suffers from drought in the conservatory. Those planted out will now require thorough waterings. The larger specimens in tubs or pots must also have a most liberal supply, provided the drainage is complete. This is the period for the free use of liquid manure, but take care that it is perfectly clear. Large Orange trees should now receive a copious supply; where these trees produce gross wood, disbud such or remove it altogether, and let the lower wood take its place; this will induce fruitfulness. See to the cuttings of Heaths as soon as the wood is in order. Fumigate the moment an insect appears. Some of the hardwooded plants of no particular importance might be removed at this period in order to furnish more room for growing young stock and fine specimens in flower. A slight protection will, however, be necessary. Old lights, or a tarpauling on poles as a lean-to, the lowest part next a south wall and the front opening well to the sun, would do exceedingly well for them. Mats may be hung at the sides at night.

STOVE.

Pay due attention to watering, shifting, and stopping stove plants in general. Make cuttings as they can be obtained in a young state, of Geissomeria, Plumbago, Eranthemum, Justicia, Clerodendron, Vinca, Euphorbia, Brugmansia, Begonia, Thunbergia, &c., in order to keep up a succession of clean young stock. See that the growing Orchids have abundance of atmospheric moisture, with a liberal circulation of air early in the morning, shutting up closely betimes, and taking care to observe moderation in the use of fire heat, in order that a pure atmosphere may be inclosed for the night. Growing Dendrobiums will now require liberal supplies of water, and Air-plants on blocks frequent syringings.

PITS AND FRAMES.

Look to tender annuals and cuttings during dull weather, and see that no damp collects amongst them. If this should make its appearance more air and much less water must be given. This is a good time to take off the tops of early-struck cuttings, and to put them into cutting-pots for store; if not wanted for beds, they might be planted out in borders after the beds have been filled. Keep up a gentle heat for tender annuals, and attend to potting-off and shifting as the plants require it. Continue to harden off such plants as have made sufficient growth to prepare them for beds. This is an important point in bedding-out, as sudden exposure nearly, if not quite, destroys them.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Trimming Box-edgings.—A few gaps having shown themselves, and some of the higher, straggling twigs being browned by the frost, we had the Box cut and put in good order for the summer. Could we have reckoned on being able to do this a month hence, we would have preferred it, as then the fresh growth would come so quickly that the edgings would present no brown scraggy appearance. If we have mild weather with frequent showers, the edgings will remain green as the shears have left them, but if we have dry frosty winds, we may expect that for a few weeks the edgings will have a brownish look. Hence, when trimmed only once a-year, we prefer doing the work in September as then they continue green all the winter, spring, and summer. When the edgings are above 3 inches in height they look cumbrous and are a harbour for slugs, snails, &c. We have often done this work with a sharp scythe, but it requires a first-rate scythe-man and a very firm wrist, and even then it is difficult to prevent the point of the scythe dipping in too much at times so as to interfere with a straight line. A good man used to the shears will do nearly as much, and the work will be better done. In straight lines a stout line is stretched along the middle of the Box, the two sides clipped, and then the top cut over, the workman needing no guide but his good eye.

Almost finished Potato-planting, the ground being in good order. Sowed Turnips, Radishes, and Lettuces, on a raised border. We generally sow *Turnips* thinly in rows 2 feet apart, and *Radishes* in rows between them, the latter being all pulled before the room is needed for the Turnips. The White Turnip-rooted Radishes are very useful for soups before Turnips come in. Our stored Turnips are keeping badly this season, going at the heart. Those growing out of doors from late autumn sowings are just Turnips to look at, as when the top grows they become hard. A good juicy Turnip from this time cannot be had except by early sowing under glass, and that makes them expensive, until they come in from open-air sowings.

For general purposes we have long used only three kinds of Radish—the Short-topped Long Scarlet, and the Red and White Turnip-rooted. Other sorts, as the Black, Purple, &c., are hardier for winter, but then they are hard too when used. The White Naples looks well on a salad plate, but it, too, is generally more stringy than the common Short-topped. Of Turnips we like the Snowball and the White Dutch for early use, and a green-topped strap-leaved kind is also very early, quite as early as the Early Stone; but for the general crops we prefer the American Red-top, which is crisp, rich in flavour, and pure white-fleshed, the latter consideration being as yet too much a matter of importance at most tables. For flavour we prefer some of the yellow kinds, as the Maltese; and for a wholesome dish to satisfy the appetite with good food, commend us in winter to a well-boiled well-mashed Swede.

Ran the Dutch hoe among Cabbages and other growing crops, and, if a few dry days continue, will do the same with all parts and crops to which we can have access.

Peas.—Sowed more Peas and Beans. It is right we should mention here that our first sowing out of doors has not come in so soon as we expected, and on examining into the cause we find they are too deeply covered, and that a few seeds will likely go in consequence. A depth of 2 or 3 inches is quite enough at this season, 2 inches, in fact, being ample; but we find ours are covered from 3 to 4 inches, from the earth being piled over them. After this we prefer sowing in a rather wide drill, and deep enough, so that when the Peas are covered the opening shall be from 1 to 2 inches below the surrounding level, for then it is much easier watering the Peas if they require it in summer.

Cleared off the quarter of old Cabbage stumps that stood the winter, laid it out for beds for *Celery*, 3½ feet wide, with four-feet spaces between. Dug over the four-feet spaces, on which some material from the rubbish-heap had previously been placed. Took a good spit from the trench intended for the Celery, and placed the soil on the space between; and then on every alternate raised bed we will sow a row of Peas, and then on the other dwarfer Beans, &c., so that we shall have no difficulty in watering the Celery. Growing chiefly dwarf Celery, we have given up deep trenches. When the dung is added and the trench well dug over, the Celery-bed will not be much below the surrounding ridges, and the not sinking it deeper is a safeguard against rotting and damping in winter. When we were obliged to use these Celery-trenches for bedding plants in the first place, we could do no good with Peas between the beds; but as we think we can dispense with the beds for the above purpose, we will revert to an old favourite plan of ours—namely, cutting out the Celery-beds early, sowing with Peas early on the raised beds, and then cropping the space intended for Celery with early Potatoes, Lettuces, &c. We never had better Celery, and procured with less trouble, than when the trenches alternated with raised beds, on which were Peas as the main crop, and Radishes and Spinach at the sides. The Celery in the early part of the season is much benefited by a flickering shade, such as it would obtain naturally in the bottom

of a ditch, with a few twigs waving above it to break the force of the sunbeams.

Asparagus.—Threw a sprinkling of salt over the plantation, and turned the ridges of a piece of ground, previously well trenched and manured, intended for planting. We find no simpler plan where much is to be taken up and forced, than planting in rows from 2 to 2½ feet apart, and if the ground is stiff, making the rows raised as flat ridges. The annual dressings will fill up the hollows. A good old plan for regular beds, is to take out a deep trench, and of proper width, in winter; collect in that trench all the weeds, prunings, and refuse vegetables about the place—and drainage will thus be secured—follow with a bed of fermenting material in spring, cover with soil, and use the bed for Cucumbers and Vegetable Marrows in summer, and then a little working will secure a first-rate bed for planting Asparagus in the following spring. Where practicable, from having the young plants on the place, it is of advantage to have them grown 2 or 3 inches above ground before planting, and during that operation never to allow the roots to be dry.

Cucumbers in a pit and in frames we have been obliged to smoke with tobacco paper, as green fly made its appearance, owing, we believe, to the plants being more covered than usual in the dull cold weather. The hot water has beaten the frame this year by a few days. The first spring fruit from the pit was from a plant that was not wanted, and which stood for a good while in a 6-inch pot; as it showed a nice fruit the bottom of the pot was broken, and pot and all placed inside a 12-inch pot. We have not used pots so much as we formerly did, chiefly from not having pots large enough handy; but many years' practice with pots and boxes, with and without bottom heat, enables us to corroborate all that is said of the good results of that system in a recent number, as practised by Mr. Cramb, of Tortworth. When the pots were large we used to plant 6 or more inches from the rim, and earth up by degrees, using only slight surfacings at a time, and not adding this surfacing until the previous surface was covered with healthy roots. If the pots were too shallow for this we used to put rings of zinc or firm turf round them, and thus earth up the plants gradually. Wherever any of the dread diseases that afflict Cucumbers appear—and as to the curing of which, besides fresh soil and frequent planting, we can say nothing satisfactory—we would heartily recommend the growing in pots as one of the most likely means of surmounting the difficulty. Treated as above, we have had 16 and 18-inch pots standing on the top of a rickety flue in a Pine-stove, separated from the flue by a couple of bricks, and a pan of water between the bricks, or set on the flue close at hand, and the plants in these pots would frequently produce freely for a couple of seasons. The late Mr. Ayres, father of Mr. W. P. Ayres, was a most successful cultivator of Cucumbers in pots, and as far as we recollect, he pointed out to us more than thirty years ago plants that were upwards of two years old. The mere age is a matter of less importance—it is mentioned chiefly as a curiosity; but the necessary curbing of the roots, and the lessening the space of the feeding ground, seem to promote enduring health as well as increased fertility. As several times stated, so convinced are we that Cucumbers do all the better with a limited amount of feeding ground, that the soil in our pit is only about 2½ feet wide, and in our six-feet frames the earth only occupies a width of about 2 feet, strong slabs generally separating this earth from the back and front of the bed, though all is earthed over for the sake of appearance; but the sides, back, and front have only from half an inch to an inch of soil, whilst the centre where the plants stand has a depth of from 15 to 18 inches.

We may here, also, mention, as bearing on the same principle, that we know of no plan equal to growing in good-sized pots in order to obtain good and heavy Melons in proportion to their size. We question if we could please ourselves in giving any reasons why in such a mode of culture great weight in proportion to size should be such a frequent result, but scores of times we have been struck with the fact. This, we may add, was chiefly the case when the Melon was suspended; but the additional solidity and weight were not solely owing to this suspension of the fruit, as, in the same house, with fruit equally suspended, those grown in a bed were as a general rule less distinguished for weight than those grown in pots, the pots being merely set on the bed and the plants not rooting at all or but little into the soil. Were the juices better elaborated owing to the roots being unable to give the foliage so much to do?

FRUIT GARDEN.

We have been unable as yet to finish nailing some of our protected trees; but that is of less importance, as most of the pruning had been done. Untied the Currant and Gooseberry bushes that had been tied up in the faggot style, and then limed. There will be plenty of fruit this season if all goes on well. The sound of the gun has, no doubt, helped. No report of a gun was heard last year. There was no tying up of the bushes, and by the middle of March, the budless bushes were enough to make one melancholy. We would say, then, that where birds are troublesome, the tying up of the bushes after they are leafless in autumn, and dredging them over with lime, is worth a trial by way of preventive. Of our dwarf Pear trees, the two that have suffered most from birds this season, were the two fullest of buds and earliest, and in the severe frosts of March we placed some tall evergreen branches round them; but we had to remove the branches, or a single fruit-bud would not have been left, the branches being more enticing to the birds than even a net, and that if not thoroughly secure does as much harm as good, as the winged tribes will not be satisfied until they know all about what is beneath it.

Orchard-houses.—We are keeping the latest as open as it will be safe, and the bloom is still beautiful; the earliest house we shut up early, and if cold put a little fire in our stove, which we alluded to lately, and which since our little alteration has given no trouble. If there is a fire you feel the genial atmosphere as soon as you open the door, without the slightest sensation of dry heat. A few minutes after lighting, the stove has an effect upon the atmosphere of the house. For all large houses we would employ hot water; but where economy in heat is to be a consideration, nothing will equal a stove inside of a house, if properly set and properly managed. In this house we have gone over the trees twice, nipping and removing foreright shoots, but not taking away many shoots at a time.

Strawberries.—The weather has been rather favourable, the fruit which ripens is of tolerable flavour, and the setting now is all that could be wished. We mentioned a few weeks ago that for years we had seen little of the fly on forced Strawberries, but though not an insect of any kind has as yet appeared on the Peach trees, we have had to smoke the house twice or thrice, on account of green fly on the Strawberries. As the smoking, do it as you will, is rather an expensive process, we tried at first what the finger and thumb would do, but the insects came here and there so thickly on the central young leaves, that smoking had to be resorted to. Now, as before housing these plants a good portion of the old leaves were twisted off, the surface soil removed—say, for the sixteenth of an inch, and fresh-aired compost added, there seemed no way for the green fly to come, unless from eggs that had been inserted in the central buds some time last autumn.

ORNAMENTAL DEPARTMENT.

Finished turfing, and glad it was done, as it is late enough if all trouble afterwards is to be avoided, though we have turfed successfully in the dog-days; besides, at this season there is much routine work demanding attention. All evergreens may be pruned still, but the sooner the better before they push afresh. We must take the first opportunity of preparing beds, regulating herbaceous plants, &c.

We referred to Neapolitan Violets some time ago, old plants that rather disappointed us before the new year, and hence we recommended planting afresh every year; but these old plants —that is, those which have been two winters in the same bed, have done remarkably well all the spring-time since the middle of January, and produced larger flowers than are generally to be had from younger plantations.

Planted out under protection some Calceolarias, and will go on as opportunity offers. Potted and placed singly in pieces of turf lots of bedding plants, moved Pelargoniums to cool vinery preparatory to moving to conservatory. Potted young plants for autumn blooming, fresh regulated conservatory, and will bring the most forward blooming Camellias and Epacrises into the vinery to cause them to make their wood. Epacrises and spring Heaths stand pruning back freely, but only so far as last year's wood is concerned, and not that which is older. Pricked out numerous seedlings, and made a good many cuttings, as they will yet be time enough for planting out. In wet days, as Saturday, had plenty to do in cleaning and mending glass, potting, and other work.—R. F.

COVENT GARDEN MARKET.—April 17.

A general depression pervades our market in the demand for all but the most common articles, and prices recede accordingly; Pines, Grapes,

and Strawberries being in excess of what is required. A few Cherries from the south of France have arrived this week in tolerably good condition, and other imports are becoming heavy.

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... each	0	6 to	0	8	Leeks ..... bunch	0	3 to	0	4
Asparagus .... bundle	6	0	10	0	Lettuce ..... per doz.	1	0	2	0
Beans, Kidney, per 100	2	0	3	0	Mushrooms .... pottle	1	6	2	0
Scarlet Run, ½ sieve	0	0	0	0	Mustd. & Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions.... per bushel	4	0	5	0
Broccoli ..... bundle	2	0	3	0	Parsley..... per sieve	4	0	6	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsnips ..... doz.	0	9	1	3
Cabbage ..... doz.	1	4	2	0	Peas..... per quart	10	0	0	0
Capsicums..... 100	0	0	0	0	Potatoes ..... bushel	4	0	6	0
Carrots..... bunch	0	6	0	8	Kidney ..... do.	5	0	6	0
Cauliflower ..... doz.	4	0	8	0	Radishes doz. bunches	0	9	1	6
Celery ..... bundle	1	0	2	0	Rhubarb ..... bundle	0	4	0	8
Cucumbers..... each	0	9	2	0	Savoys ..... doz.	3	0	4	0
pickling .... doz.	0	0	0	0	Sea-kale ..... basket	1	0	2	0
Endive ..... doz.	2	0	0	0	Shallots ..... lb.	0	8	0	0
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	3	6	4	0
Garlic ..... lb.	0	8	1	0	Tomatoes.... per doz.	4	0	0	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	6	0	0
Horseradish .. bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0	0

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples .....½ sieve	2	0 to	3	0	Melons..... each	0	0 to	0	0
Apricots ..... doz	0	0	0	0	Nectarines ..... doz.	0	0	0	0
Cherries ..... box	5	0	0	0	Oranges 100	5	0	10	0
Chestnuts ..... bush.	0	0	0	0	Peaches.....doz.	0	0	0	0
Currants..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	3	0	6	0
Black ..... do.	0	0	0	0	kitchen..... doz.	2	0	4	0
Figs ..... doz.	0	0	0	0	Pine Apples ..... lb.	6	0	8	0
Filberts.....lb.	0	0	0	0	Plums ..... ½ sieve	0	0	0	0
Cobs..... lb.	0	9	1	6	Quinces ..... doz.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Raspberries.....lb.	0	0	0	0
Grapes, Hothouse..lb.	8	0	14	0	Strawberries..... oz.	0	9	1	6
Lemons 100	5	0	10	0	Walnuts..... bush.	10	0	20	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

FAILURE OF SUPPLY (*G. C. K.*).—Messrs. Marshall & Co. and all other booksellers, as well as the proprietors of railway bookstalls, receive their supply on the morning of our publication. The failure is not with us.

RUBUS LEUCODERMIS (*G. S.*).—We do not remember this plant being mentioned in our columns. It is one of the plants introduced from North-western America by the ill-fated Douglas in the year 1826. Whether it requires a wall to ripen its fruit we cannot say.

BOOKS (*H. C.*).—"The Science and Practice of Gardening" can be had, post free, from our office if you enclose forty postage stamps with your address. (*R. S.*).—We know of no separate work on Melon culture. (*Axios*).—We do not know any book on Tea culture in India. Mr. Fortune's volumes on China contain some information on Tea cultivation. There is much information on the subject in the fifth volume of the "Transactions" of the Agri-Horticultural Society of India, which we have before us.

EPIMEDIUMS (*A. H. of B.*).—Without seeing flowering specimens no one can tell the names of the plants you have. Epimedium grandiflorum has white flowers, and is a native of Japan. E. pinnatum has yellow flowers, and is a native of Persia; there is a drawing of this in the "Botanical Magazine," *t.* 4456. The seed of the bee flower, Cleome integrifolia, cannot be obtained here at present. It might be obtained by post from some seedsman in Chicago, probably.

MULBERRY TREES BEARING EARLY.—"In reply to your correspondent B. P. Bartlett (page 266), I would say that last autumn I bought of Mr. Rivers a potted Mulberry about 3½ feet high, which is now, in a warm orchard-house, a mass of bloom. It is not for me to publish any further particulars of these extraordinary trees, but I recommend friend Bartlett to buy one. I had a common plant for years in a pot under glass, till I turned it out in disgust. I have heard of the plan you recommend having succeeded, and indeed saw such a plant once at Weybridge, but it was much older and larger than Mr. Rivers's plants.—G. S."

POLYANTHUSES (*Richard Dean*).—There are four very promising flowers among the selection of Polyanthus. They appear to have a circular form, and the lacing round the petals is smooth and distinct. It would be much safer to judge of their merits from seeing the plants growing, and thus learn their habit and style of truss. Could you not send them to the Floral Committee of the Royal Horticultural Society?

PROPAGATING RHODODENDRONS (*Sunny*).—Rhododendrons cannot be successfully propagated from cuttings. They are increased from seed, layers, and graftings.

TRICOLOR PELARGONIUMS (*H. H. B.*).—The leaves you sent marked "Princess Lichstentein" and "Emma" are richly coloured, but there are now such numbers, and so little varying from predecessors, that habits and other characteristics must be also considered before we can venture to say that this or that is an acquisition.

PYRAMIDAL FRUIT TREES (*A. A.*).—You may see them in first-class condition at Messrs. Rivers's Nursery, Sawbridgeworth, Herts.

POINSETTIA (*A. M. G.*).—You can obtain plants of any florist who advertises in our columns.

ORCHARD-HOUSE (*A Subscriber*).—Your walled angle will answer for an orchard-house. For Vines, it would have been better if the sun had continued longer on the house. We advise planting the Vines inside. A small stove would make such a house more generally serviceable.

PEAS (*C. P.*).—We have lost your address, or would forward to you a parcel intended for you, which we have just received.

MUSHROOM CULTURE (*A. D.*).—In "Doings of the Week" and elsewhere you will find several modes of cultivating Mushrooms successfully, and each of them will answer if carried out. From what you state you have done quite right in making up a bed about a foot deep of horse-droppings alone, but only making the bed by adding 2 inches at a time, and beating well as you went along. If a week or more passed between these additions your bed would never heat violently, and this would save the strength of your manure for the Mushrooms. You then add half an inch of soil—spawn, we presume, in the soil, and then add 1 inch more soil, beat down, water, smooth as often described, and cover with a little hay. The mode will do very well provided the suitable degree of heat is secured; at the time of spawning and afterwards the bed should be little over 80°, and the atmosphere of the place from 55° to 60°. We would have preferred placing the spawn in the dung instead of in the soil; but in either case it would find its way to the dung. In such good material we often add about one-third of lumpy, fibry, dry soil in making the beds; but when the dung is made from poor litter we use less soil in it. If you secure the proper heat we feel sure you will obtain plenty of Mushrooms.

LAWN RENOVATING (*F. E. M.*).—You should at once cover the lawn with rich soil, having previously raked it well with an iron rake. The soil should be put on one-quarter to half an inch thick, after the first rain it should be again raked well, and when dry the following mixture may be sown:—Festuca durinscula, 6 lbs.; Festuca ovina, 2 lbs.; Cynosurus cristatus, 6 lbs.; Poa nemoralis, 2 lbs.; Trifolium repens, 4 lbs.; Lotus corniculatus minor, 1 lb. Roll the ground well after sowing. The lawn should not be mown or rolled for at least a fortnight after sowing. The seeds may be had of any of the principal seedsmen.

WHITE SCALE ON PINE PLANTS (*A Subscriber*).—The powder to which you allude will not injure the plants if dusted into the heart of the young leaves, unless there be water lodging there. The plants should be dry before dusting with the powder, and it should not be wetted for twenty-four hours afterwards.

GUZMANNIA PICTA CULTURE (*Idem*).—Its treatment does not differ from that of stove plants generally, thriving as it does in a compost of turfy loam, peat, and leaf mould in equal parts, with one-sixth pieces of charcoal not larger than a hazel nut, the dust being sifted out, and a like proportion of silver sand. Good drainage is essential, and the soil should not be sifted but chopped, broken, and make fine with a spade. Water should be sparingly given after potting until the roots are working in the fresh soil, and when growing freely water should be supplied more liberally; and with a moist atmosphere and a moderate amount of air, the plant will grow freely. At night a temperature of 65°, and by day of from 75° to 90°, suits it during the summer.

TRANSPLANTING HOLLIES AND YEWS (*E. M.*).—You could not have a better time than the present for removing Holly and Yew trees about 6 feet high. The trees being dug round 2 feet from the stem, move them with as much soil as will adhere to the roots, and preserve as many of these as possible. Make a hole large enough to admit the roots without cramping or turning up their points against the sides of the hole, and spread out the roots carefully, placing some fine soil beneath, over, and around them. Do not plant too deeply, and after planting give a good watering. You may plant at the end of September, which is probably as good a time as any for planting evergreen shrubs.

PLANTING LAURELS ON A BANK (*Idem*).—The best time to plant Laurels on a bank or elsewhere, is from the third week in September to the middle of November, and the most suitable size of plant are those from 2½ to 3 feet in height; but the smaller they are the more certain are they of growing. They should be allowed to make a season's growth and should then be pegged down.

YELLOW-BERRIED HOLLY SOWING (*A Young Gardener*).—You may sow the berries now, or defer doing so until autumn, keeping them in the "rot" heap during summer. Sow them early in October. They will grow next year whether you sow them now or defer doing so until autumn.

MOVING CROCUS BULBS (*A Constant Reader*).—Taking up Crocus bulbs to make room for bedding plants is a bad practice and wholly unnecessary, for the Crocuses being in rows may remain, and the bedding plants be planted between them. The Crocus foliage may be removed when it decays, and it does not remain so long as to detract from the beauty of the bedding plants. You may remove the Crocuses, taking them up with a ball, and replant them in an open situation. They may remain in their new position until autumn, and may then be removed to the flower-beds and borders. The best plan is to leave them in the beds, and not disturb or replant them oftener than once in three years, and then take them up and replant on the same day.

PHOTINIA SERRULATA PROPAGATING (*F. G.*).—It is propagated from layers and cuttings. Layering may be done now, and the plants will be well rooted by autumn. The cuttings may be put in towards the end of summer in sand in a shady place under a hand-glass, or they will root more quickly if placed in a mild hotbed the same as for Rose cuttings.

BROCCOLI FOR SPRING AND EARLY CABBAGES (*A Young Beginner*).—Dilcock's Bride and Elletson's Mammoth will suit you in Broccoli for market purposes, and Cattell's Reliance and Battersea or Pulham Cabbages will suit you; but if you want a very early Cabbage, Atkins's Matchless, of which the Messrs. Veitch have an improved variety, is the earliest and best.

Hardiness of Shrubs (*F. G.*).—Rottlera japonica and Cæsalpina japonica are not more hardy than that they will do against walls in warm situations, or mild localities, having protection in winter. Stephania hernandifolia is a greenhouse plant or shrub; Chamæbatia foliosa and Embothrium coccineum are hardy in sheltered situations, but do best against a wall with a south or south-west aspect, and the same may be said of Pterostyrax hispidum, which is, if anything, more hardy.

Slugs and Woodlice in Fernery (*Pteris*).—Slugs are best caught by searching for them at night with a lantern. Woodlice are not easily caught. Their numbers may be considerably diminished by placing a boiled Potato in a little hay at the bottom of a flower-pot, and laying the pot on its side near their haunts at night. In the morning shake the woodlice out of the hay into boiling water. A number of Potatoes may be cut through the middle, the inside scooped out a little, and the pieces placed at night, hollow side downwards, near the haunts of the woodlice. In the morning the insects will be found secreted under the Potatoes and may easily be destroyed in boiling water. These traps will last a long time. For slugs, fresh Cabbage leaves may be laid at night near the plants eaten, and early in the morning the slugs may be found secreted under them. The leaves should be replaced every night by fresh.

Temperature of Fernery (*Idem*).—For your temperate fernery you will require heat when requisite to maintain the temperature at 45° at night, and this will be necessary from September to May. From September to March you will employ fire to maintain a temperature of 45° at night, though the thermometer may sink on very frosty nights to 40°; and from February to May the temperature at night should not be less than 45°, or from that to 50°. The day temperature will be regulated by the weather.

Lawn Covered with Lichen (*E. M.*).—Have the lawn well raked with an iron rake, drawing it backwards and forwards, and this being done two or three times the lawn should be covered with rich compost or manure reduced to mould, and again well raked. The soil or manure may be put on to the depth of a quarter or half an inch, then sow Festuca dumetosa, 6 lbs.; Cynosurus cristatus, 6 lbs.; Poa nemoralis, 2 lbs., and Trifolium repens, 4 lbs., and well roll afterwards. The quantity is for an acre.

Portulaca Culture (*J. T. B.*).—The culture of these handsome half-hardy annuals is very simple, but they must have a warm, sunny situation and a light, dry soil. The seed should be sown in pots or pans in a compost of light loam and peat in equal parts, and one-third of the compost should be brick and lime rubbish or gravel. The pans or pots should be well drained. Being placed in a mild hotbed water should be sparingly given, and only when necessary, then enough to run through the soil. When the seedlings are about an inch high remove them to a greenhouse or frame, and in June plant them out on ledges of rockwork, in rustic baskets, or in a sunny, warm situation, giving them to grow in at least a foot of the soil recommended for sowing, and if a foot of gravel or brick rubbish is placed under that all the better, as they flourish in a light, well-drained soil, on shallow soil on ledges of rocks, and on dry, well-drained slopes having a southern exposure.

Garden Netting (*G. E. J.*).—The netting which you mention is worth 9*d.* per lineal yard, or 3*d.* per square yard when the maker finds his own twine, and the netting is tanned to preserve it from the weather. For the size of net you name the maker should have 6*d.* per lineal yard, or 20*s.* The mesh you name is much too wide for Strawberries; it should not exceed three-quarters of an inch, and the price for that is 1*s.* 3*d.* per lineal yard of the width you name. Unless you have nets at some distance from the Strawberries the birds will peck the fruit through the large meshes.

Strawberries Going Blind (*A Gardener*).—The principal reason of their going blind is the roots being injured by exposure of the pots to frost, and another very potent reason is the immature condition of the crowns, and their being forced too highly at the commencement, whilst with a pot full of roots, the crowns well matured in autumn, and a light, airy situation, they are seldom blind unless the heat is excessive; that you name is quite high enough for them by or before they come into flower. You cannot give them too much air.

Enanthemum nubaovenium Culture (*Idem*).—It grows freely in a compost of turfy peat, loam, and leaf mould in equal parts, with a free admixture of sand. It should be potted now and have good drainage. Its treatment is not different from that of stove plants generally. We cannot make out the name of the other plant about which you inquire.

Cutting down Furze (*Jos. Templar*).—If you cut the Furze bushes now close to the ground they will shoot from the bottom unless very old, when some of them may die off.

Glands on Peach-Tree Leaves (*H. H.*).—The glands are on the leaf-stalks, near the base of the leaf.

Guano Liquid Manure (*Cheltenham*).—Half an ounce of guano to a gallon of water is quite enough for potted plants. One ounce to the same quantity of water may be employed to border plants. There is nothing surprising in the statement about the Cyclamen seedlings, if the cultivation mentioned by "H. C." is adopted.

Names of Plants (*D. Boote*).—Berberis aquifolium and Arabis verna. We cannot venture to state the heights, &c., of Phloxes. (*F. E. H.*).—The two are identical. Doodia caudata is the correct name. (*J. H. C.*).—1, Dendrobium primulinum; 2, Goniophlebium appendiculatum; 3, Asplenium diversifolium; 4, A. Belangeri; 5, Hypolepis anthriscifolia; 6, We do not recognise it, send again when in flower. (*Market Drayton*).—Probably Saponaria calabrica; but we cannot be certain from such specimens.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 16th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 10	29.899	29.511	54	40	49	47	S.W.	.02	Fine; overcast; boisterous, with rain at night.
Thurs. 11	29.967	29.516	57	26	49	46	N.W.	.00	Stormy; very boisterous, with dense dusky clouds; fine.
Fri. .. 12	30.158	30.066	58	38	49	46	S.W.	.03	Clear and very fine; fine at night.
Sat. .. 13	30.057	29.799	55	46	49	47	S.W.	.09	Rain, and rather boisterous; rain; densely overcast.
Sun... 14	29.607	29.295	49	41	50	46	S.W.	.39	Boisterous with rain; very wet; very boisterous at night.
Mon... 15	29.695	29.415	62	40	50	47	W.	.04	Boisterous and showery; fine at night.
Tues.. 16	29.722	29.608	56	41	50	47	S.W.	.06	Rain; showery; drizzly and overcast.
Mean	29.872	29.601	55.86	38.86	49.43	46.57	..	0.54	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

VULTURE HOCKS IN BRAHMA POOTRAS.

In the discussion of this and of many other poultry matters, it appears to me that there has been a grievous want of that candid disposition to allow fair and proper weight to opposite views, which can alone lead to really satisfactory conclusions; and in approaching it myself I fear that I may meet the proverbial fate of those who interfere between husband and wife, and draw upon myself the hostility of each party, since I cannot altogether side with either, but I shall endeavour, whilst freely expressing my own opinions, to give fair play to both sides.

Those who contend that the recent crusade against vulture hocks is altogether an innovation, are certainly wrong in point of fact: for although only lately so rigidly disqualified, they have always been looked upon with disfavour at first-class shows, and considered as decided blemishes in otherwise good birds. Indeed, even now, I scarcely know of any who profess to admire them for their own sake, apart from their assumed connection with heavy leg-feathering; and I did, in fact, believe there were none such, until a few days ago I found I was wrong, and that there were breeders who actually admired the vulture hock *per se*. Neither can I by any means admit, as some would insist, that we must choose between vulture hocks and naked joints with comparatively bare shanks below them. If it were so, I would, indeed, ten times rather put up with the vulture hock. It will, however, I suppose, be granted that White Cochins are even more prone to the blemish under discussion than Brahmas—perhaps, indeed, more so than any other fowl we have; yet I appeal to all who can remember when Mrs. Herbert still exhibited, whether she did not always show birds magnificently feathered, but quite free from vulture hock? That this result was not due to trimming I am certain. Coming back to Brahmas, it will again be confessed that Mr. Boyle usually manages to show birds with splendid leg-feathering; yet there are never many vulture-hocked chickens in his yard, and those few so slightly so that they would probably pass muster in a pen. I need not pursue the argument further, only I repeat that since vulture hocks have always been more or less discouraged, and still well-feathered birds have been bred and shown for many years, we can surely breed good birds without them now.

Still it is an unquestionable fact that, connected with the recent decisions, we have of late had a great increase of naked-hocked and bare-legged birds. One reason of this, as I have before remarked, is the Dorking cross, which is just now more than usually prevalent in many Brahma strains, and upon which I need not remark further, as I have fully treated of it elsewhere. But the principal cause certainly is, that many exhibitors have what can only be called such a blind and senseless fear of the vulture hock, that they breed from their barest-legged birds rather than run the least risk of it. They recoil in terror from the idea of breeding from a cock whose hocks are only (as they ought to be), nicely covered, and rather than incur the very slightest chance of the dreaded fault choose birds whose legs are as naked as Adam's. Such will

reap the legitimate fruits of their folly, which ought not in strict fairness to be charged as a necessary result of recent decisions, though I must say that the eminent "professional judge" who informed "FALCON" that he always looked with suspicion even on "heavily feathered legs," did his share towarda causing the evil.

It cannot be too strongly insisted upon that the hock of every Cochin or Brahma ought to be well covered with soft feathers, nicely curled round and hiding the joint. This is not vulture hock, which consists of *stiff* and straight feathers projecting over the joint so as to form a distinct spur upon the limb; and I must say that if judges in general come to share the feeling of the "professional judge" already alluded to, whose name I do not know, and discountenance what ought rather to be insisted upon as the only correct feathering, we shall soon be all wishing to see hocks as large aa my hand, rather than what we shall see.

It will be seen that I am no friend to the vulture hock; yet there has been a most uncommon amount of incorrect assertion rashly made upon the other side. For instance, it has been said in these pages by "one of our ablest judges," whose name again I do not know, that vulture hock is altogether a recent introduction, perpetuated by "some unhappy wight" who ought to have "stamped it out," but did not! Now it has again and again been stated upon unquestionable authority that some of the earliest importations of Cochins contained vulture-hocked birds, and I am able to assert in the most positive manner that the greater number of the really Dark Brahma cocks imported from America were also very much vulture-hocked, the feathers in some nearly sweeping the ground. Neither can vulture hock be "stamped out" so readily as some would have us believe. Discouraged and kept under control it may be, and I think, for æsthetic reasons, should be, without any detriment to the breed; but I am satisfied it can never be absolutely exterminated, except at the price of losing good leg-feathering, for in every well-feathered strain the vulture hock *will* appear from time to time; and although, as ought to be the case, the birds thus furnished may be only one or two in a year, it is singularly probable that those few will be the largest, strongest, and best-shaped birds of the whole. This arises simply from the fact, that the cause of the vulture hock is unusual strength and vigour in the glands which nourish the plumage, leading to luxuriant feathering; just as strong men usually have more and coarser hair than weaker ones. Such birds, therefore, in everything save the condemned feature, are the most perfect types of the breed, and often the very best to breed from, especially when crossing into a weakly, small, or badly-feathered strain; though it should be noted, that whilst such a cross will often throw beautifully and quite correctly feathered chickens, the usual result is either the bare shanks of one parent or the vulture hock of the other.

Now, I hold it as a sound principle that any feature which is peculiarly apt to occur in birds which are otherwise the very best type of a breed, and in many respects the most desirable to breed from, cannot, without injury to that type, be absolutely disqualified, as is the case now. If such an inexorable rule be laid down, the result will be, and now is, that the majority of breeders will make any sacrifice of other points rather than run the slightest risk of the fatal disqualification. That it need not be so I have shown, but that it is so any one may see; and I have now somewhere in my possession a note from one of the most celebrated and accomplished poultry-breeders in England, who ought to know better, remarking that "vulture hocks being now disqualified, we have been compelled to fall back for breeding upon the scantily-feathered birds." I deny that the inference is correct, but it is, unfortunately, general.

On the whole, therefore, I would strongly urge that the old wording of the "Standard" should be restored as the law of our poultry judging upon this point—in other terms, that vulture hocks be considered "objectionable, but *not* a disqualification;" to be discouraged as an unsightly blemish, but not to put a fine bird at once and absolutely out of court. There are certainly one or two mistakes in that useful publication, "long necks" in Brahmas being one; but, on the whole, its compilers knew what they were about; and I think the restitution of their original dictum, while it would be sufficient to keep the vulture hock under control, would meet all the real necessities of the case and the wishes of nearly all practical breeders.

It is high time this subject should be seriously reconsidered, calmly and impartially, instead of in the partisan spirit which has hitherto so much prevailed. That the rule as it stands has done great harm cannot be questioned; and that such evil can be shown to be unnecessary, does not mend it as an unfortunate fact. That the views here expressed will please the ultras of either school it may be folly to expect; but they are the result of an anxious desire to form a correct judgment upon this vexed question, and I venture to ask for them the candid consideration of our poultry judges.—NEMO.

[Without any reservation we record as our opinion, that making the vulture hock either in Cochin-Chinas or Brahma Pootras a disqualification is a great mistake. Vulture hocks are not only usual developments in these varieties, but are so frequently borne by strong, well-developed birds, that we might venture to say that vulture hocks are rarely if ever found on weakly birds.

Tastes vary, and despite "NEMO'S" incredulity, we acknowledge ourselves admirers of the vulture hock *per se*. This, however, does not influence our judgment; and if the majority of the breeders prefer birds without such hocks let them be discouraged, but do not anathematise them. If a pen of Brahma Pootras is superior to all its competitors in other points, do not act so unjustly and so unwisely as to disqualify it on account of having vulture hocks. The absence of such hocks is not, like the fifth toe of the Dorking, a mark of purity of breed.—EDS.]

BRAHMA POOTRAS.

I DO not know whether I am the correspondent of the old "Poultry Chronicle" to whom "Y. B. A. Z." refers in your last Number, page 267, but I made experiments some years ago, which I recorded in that Journal at the time, for the purpose of obtaining the pea-comb, which was alleged to be peculiar to the Brahma. I "raised" several chickens from a Malay hen and a Cochin cock, and obtained by that cross the true pea-comb, and the cruel expression of countenance too; and I am inclined to think that this is a remnant of the Malay cross whenever seen, or at least is generally so. I have never from the first hesitated to believe the account given in an American poultry-book—Bennett's, I think it is—of the origin of this variety of fowls. I remember M. Garbonati's fowls well. I also recollect the wonderful pair bought by Mr. H. D. Davies for £105. Up to the time these were shown, light birds used to obtain prizes commonly; after they put in an appearance nothing but dark birds went down with the judges. I also recollect seeing the progeny of these birds at Mr. Davies's; a more mongrel lot cannot be conceived—pea-combed and single-combed, some almost white, others almost black, it was impossible to pick out two alike. I believe that the breed has been made, as the Sebright and Game Bantams have been within a few years, and the avowed difficulty which breeders find in keeping the colour pure and getting rid of buff feathers corroborates my belief.—P.

RAILWAY EXTORTION AT LORD TREDEGAR'S POULTRY SHOW.

AT this Show, held at the close of last year, I found the charges made, especially for the homeward journey, shamefully excessive, so much so as to determine me never again to exhibit there unless the Great Western Railway relieved exhibitors from this unfair charge. I determined, therefore, to see how far my fellow exhibitors shared my feelings. Accordingly, to ascertain their sentiments, I made out a list of those that I fancied must have been victimised, adding their addresses, and headed this list with a few words to my fellow-sufferers, suggesting that we should endeavour to show the Committee of Lord Tredegar's Show that they must enforce some alteration, or we must decline entering any specimens; and I forwarded also with the list and my suggestions a memorial to the Committee, which I had already signed, for each exhibitor who pleased, to sign and forward to the next on the list, and in case of declining to sign still to forward the papers. During the past few days the memorial and its signatures have been returned to me, and by me duly forwarded to Mr. Palling, the Honorary Secretary.

There were, at the last Show at Newport, 253 entries; ninety-three of these were made by residents at Newport and in its immediate vicinity. Possibly this number is below the actual amount, as from the catalogue I may have omitted some, not knowing that the places were really local. There are also several exhibitors to whom the memorial was never sent,

simply because the chief ground of complaint being against the Great Western Railway, I gathered from their localities that they were fortunate enough to escape its tender mercies. These exhibitors are credited with between forty and forty-five entries.

Thirty exhibitors have signed the memorial; these exhibitors made one hundred entries. It follows from this, that of the one hundred and fifty entries out of Newport no less than one hundred entries were made by individuals who, in the matter of the railway charges, feel themselves to have been unfairly treated, and who have pledged themselves not to exhibit again at this Show unless some more satisfactory arrangement is made with the railway authorities. Of those to whom the memorial was forwarded only five or six exhibitors declined to sign. Amongst those who did sign are names most familiar in our prize-lists; indeed, in the actual prize-list of the Newport Exhibition twenty-seven out of the thirty signatures may be found; it cannot, therefore, be said that it has been signed only by disappointed exhibitors.

In conclusion, I must remind all those interested in getting up exhibitions, that this is with them a vital question. Quite in this light must Mr. Palling, the Honorary Secretary to the Newport Show, regard it, for a few days after the receipt of the memorial I had the following reply:—

"My Dear Sir,—Your favour with enclosures, dated 29th ult., reached me yesterday. I promise that no pains, influence, or argument that can be brought to bear shall be wanting in urging the Great Western Railway to accede to the most reasonable request of the memorial. They have been asked before and declined. I hope, however, we shall this year succeed, and be able to print the concession with the schedule.—Faithfully yours, J. G. Palling."

My advice to those who do get up exhibitions is simply this: Appeal to respective railways and say it is our intention to hold a show at such a date. The show, however, will be carried out only on condition of your reducing the rates of carriage of specimens. Now, if our dear old grandmother (for in spite of mistakes in judging and other matters, still we all like her), I say, if our dear old grandmother Birmingham would only just try this on—no reduction, no show of poultry, would she still be obliged to print that insult to all poultry exhibitors, that "all unsold specimens, except poultry, will be conveyed free on return journey?" We owe a great deal to Birmingham; we should be vastly more in her debt if she would try this plan, and in default of a successful answer carry out the threat. It is far from improbable that at Birmingham in 1868 we should have the railways offering a £20 cup and free carriage both ways.—Y. B. A. Z.

BREEDING GAME FOWLS.

In reference to "Newmarket's" remarks in No. 300, page 492, and in No. 302, page 33, I have to say, that breeding in-and-in too much is objectionable. I have invariably found the following method answer well. After the selection of your brood stock, if on due consideration you find the birds meet your approbation, put them early together so that they may become friendly one with the other. I would also keep the eggs of each hen separate and marked; by so doing you can distinguish which hen produces the most perfect progeny; indeed, some breeders are so particular that they will not allow more than one hen to each cock. Attention should be paid every day to prevent errors, and to see that your brood stock is not suffering from bad health, as deviations will occur be as particular as we will.

Should the produce meet my expectations, I would not retain the brood cock for more than four or five seasons; some breeders substitute another when he is three years old. I would then select a fine young cockerel, perfect in every respect, and breed from him and his two-year-old sisters, or from mother and son. This cross you might use to advantage for four or five years, and then substitute a fresh cross from some noted yard, but great caution ought to be used in the selection. Choose him with every essential property, otherwise you may undo all your previous care. I would then keep a cockerel from this cross and breed from him and my old hens; by this means I would not sacrifice the old blood. I should only adopt this method as a rule when my strain of brood fowls was as near perfection as good breeding could bring them. It is often the case that, notwithstanding every care in the introduction of a cross, the produce may be defective, and the defects difficult to eradicate, such as deformed backs, crooked breasts, and duck-foot.

With every respect for "Newmarket's" opinion, I must still adhere to what I previously expressed in regard to the form of tail. I think when a bird has a good neck, ample shoulders, and tapering behind, a neat whip-tail very much improves the contour, and gives a more graceful appearance. On the contrary, when a bird has a short cocked tail and the curve of the sickle feathers is short and quick, the tail has rather a broomy appearance and does not show the shoulders so finely. Light extremities I much admire, but I do not appreciate a tail that droops too much. Under excitement Game fowls will erect their tails more, and the attitude and general appearance will be more spirited. Some will also carry the tail in a very erect position when not under excitement; but I think this does not justify me in saying they are any deeper Game. I have had both kinds, but never found the cocked-tailed birds of greater courage, nor do I like them so well as the whip-tailed ones.

As regards spurred hens, I do not think the spurs produce more courage or improve the appearance of Game hens. Occasionally barndoor fowls will be found spurred, but I can see no special advantage in this. About thirty-five years ago my brother had two Game hens, one a Black and well spurred, the other a Spangle without spurs. These hens during the breeding season and when nursing their progeny would generally have their battles, and although the darker hen was the more powerful, she on several occasions had to succumb to the prowess of her more agile rival. The battles were of a determined nature, and the sufferings of these poor birds from loss of sight, swollen and skinless heads, must have been severe indeed. Numbers of cocks descended from both these hens were fought, and singular to say, those bred by the Spangled hen were better spurrers and superior fighters. The cocks from the dark hen weighed in fighting trim from 4 lbs. 12 ozs. to 6 lbs., and those from the Spangled hen from 4 lbs. to 5 lbs., and both were undoubted Game.

I think the weights in the mains of the present day are upon a higher scale than formerly. An old cocker has just informed me that several mains have been fought recently, and that the weights have been from 4 lbs. 6 ozs. up to 5 lbs. 14 ozs., indeed a few weeks ago some birds were fought at 8 lbs. He also told me that in Lancashire cocks are taken off their walks weighing 6 lbs. and fought at 5 lbs. The Shakebags or Duke of Leeds birds weighed 8 lbs. or 10 lbs., and were deep Game. The origin of this breed is not exactly known, but I should fancy the birds from their large size to be of foreign extraction. In "Sporting Annals" for November, 1827, I find that "Lieut.-Colonel Mordaunt," an ardent cocker, resolved to transport some English Game fowls to India, in order to test the courage of the foreigners in their own country. These birds had been described to him as being as bold, if not bolder, than ours, and of more strength. Lieut.-Colonel Mordaunt accompanied his cocks to India and saw them defeated.

Does "Newmarket" or any of your readers know anything of the Muscovite Black Game hen mentioned by Buffon? The large size which some, or a great portion of our Game fowls have attained is undoubtedly inherited from imported birds, and I think in some instances this cross has been indulged in too freely. Several birds which I noticed at the Halifax Show, held February 2nd, had a very stilted, gawky appearance; indeed, as I heard a gentleman remark, they had too much daylight under them. The seemingly growing propensity on the part of some breeders to exhibit such birds might be easily arrested if our leading judges would discard such ungainly specimens.

It is a pleasure to an experienced breeder to see his parent stock produce a clutch of chickens nearly equal in size, closeness, and shortness of feather, and free from any deviation in colour; also when grown to maturity for them to be well balanced in shape and contour. All the parties whom "Newmarket" mentions exhibit good birds, but whether they breed or purchase them I cannot say. In my previous articles on Game fowls I omitted the name of a successful breeder, although not a prominent exhibitor. I allude to Mr. R. Scrimminger. I should think most breeders have been greatly indebted to his stock as a cross.—Yorkshire.

FOOD FOR CHICKENS.

An advertisement appeared on the 21st of last month from a person signing himself "A. Le Cheminant, Foulon Vale, Guernsey," recommending food for chicks; the method of preparing it would be sent for seven stamps. I sent them on the

24th, and up to this time have received no reply. I again wrote for either stamps or recipe, but to no effect.—A Weekly Subscriber.

WHARFEDALE AGRICULTURAL SOCIETY'S POULTRY SHOW.

The sixty-ninth annual Exhibition of the Wharfedale Agricultural Society took place at Otley on the 12th inst. This is perhaps the eldest Society of the kind in existence, and has enjoyed an uninterrupted series of successes since its establishment. Being the first show of the kind in the season in Yorkshire, it is generally well attended, and this occasion was no exception; and had it not been for the unexpected and unfortunate strike of enginemen on the North-Eastern line, there is no doubt but the good old town of Otley would have witnessed the largest concourse of people that had ever been seen within its precincts. As it was, the whole of the traffic on this line was suspended, which proved a great hindrance to the conveyance of stock and poultry; and had it not been for the extreme courtesy of the Honorary Secretary, Mr. Lee, in withholding the Judges from their labours till a late hour, many would have had to suffer disappointment who can now exult in well-won honours.

In *Spanish* there were but three entries, the cockerel in the first-prize pen and the pullet in the second being gems of their kind. *Dorkings* had a large entry, some large well-framed birds being exhibited. Two magnificent pens of *Polands* were shown by the same exhibiter, the first award going to Silver and the second to Golden. The class for Red *Game* was large, and some excellent birds were shown, especially Brown Reds, which colour took both prizes, Mr. Aykroyd winning first with a pair of birds which may be said to be perfect; this pen also took the silver cup given for the best pen of Game of any variety. A good pen of Duckwings was first in Greys and Blues; and in the Variety class the first prize went to Red Piles, no others in these two classes being worthy of notice. The Golden-spangles as a class did not look well, though two excellent hens were shown by Messrs. Ashton and J. Dixon. The winning pens in the rest of the *Hamburgh* classes were as good as could be wished for, the first-prize pen of Silver-spangles belonging to Mr. Beldon standing quite prominent—being, in fact, one of the most striking and perfect pens of birds that can be conceived. The silvery whiteness and almost transparency of the neck and tail hackle of the cock enabled the marking of the plumage to be seen to great advantage. The cup for the best pen, Game excepted, was awarded to these birds, and they were sold very readily at the close of the Show. *Game Bantams* were but poor, but some very excellent Blacks and Whites were exhibited, also Gold and Silver-laced.

There were two pens of good large Rouen *Ducks*, but the rest were poor. Aylesburys were a wretched class. Mr. Dixon was first in the Variety class with a lovely pen of Bahama Ducks; and the pen of Carolinas shown by Mr. Harrison were very fine.

There was a moderate entry of *Pigeons*, Mr. Beldon being the principal winner.

Spanish.—First, H. Beldon, Gilstead, Bingley. Second, J Thresh, Manchester Road, Bradford. Highly Commended, J. Dyson, Wetherby.

Dorkings.—First, H Beldon. Second, J. White, Warlaby, Northallerton. Highly Commended, T. Mason, Green Hammerton. Commended, W. M. Spence, Weston, near Otley; J. White; W. Edmondson, Highfield, Denton, near Otley.

Polands.—First and Second, H. Beldon.

Game (Red).—Cup, E. Aykroyd, Girlington Road, near Bradford. Second, J. Hodgson, Bowling Old Lane, Bradford. Highly Commended, H. Beldon. Commended, J. Hudson, Baildon Green; J. W. Other, Leyburn, near Bedale; T. Mason.

Game (Grey or Blue).—First, W. Fell, Adwalton, near Leeds (Duckwing). Second, Miss Deighton, Hawksworth, near Otley.

Game (Any other variety).—First, H. C. Mason, Drighlington, near Leeds (Pile). Second, J. W. Other.

Hamburghs (Golden-spangled).—First, S. & R. Ashton, Mottram, Cheshire. Second, J. Dixon, North Park, Clayton, Bradford. Highly Commended, H. Beldon; W. Barstow, Bingley.

Hamburghs (Silver-spangled).—Cup and Second, H. Beldon. Highly Commended, J. A. Taylor, Manchester. Commended, J. Dixon.

Hamburghs (Golden-pencilled).—First and Second, H. Beldon, Bingley. Highly Commended, J. Dixon, Bradford; W. J. Harker.

Hamburghs (Silver-pencilled).—First and Second, H. Beldon. Commended, R. Longbottom, Bingley.

Game Bantams.—First, J. R. Jessop, Hull. Second, Moody & Cooper, Otley. Highly Commended, R. Charlesworth; J. M. Jolley.

Bantams (Black).—First, H. Beldon. Second, W. A. Taylor, Manchester. Highly Commended, J. R. Jessop.

Bantams (White).—First, J. R. Jessop. Highly Commended, W. Bentley, Fairweather Green, Bradford; F. D. Johnson, Birmingham.

Bantams (Any other variety).—First, T C. Harrison, Beverley Road, Hull. Second, S. & R. Ashton. Highly Commended, H. Beldon:

Any Other Distinct Breed.—First, H. Beldon (Cochins). Second, J. Dixon (Cochin Partridge). Extra Second, W. A. Taylor (Buff Cochins). Highly Commended, H. Beldon (Brahmas). Commended, W. Bentley (Andalusian).

Ducks (Rouen).—First, J. Ward, Drighlington, near Leeds. Second, J. Dixon. Highly Commended, H. Beldon; W. R. Renton, Riffa, near Otley; A. Fawkes, Farnley Hall, near Otley.

Ducks (Aylesbury).—First, Miss Newsome, Whack House, Yeadon. Second, A. Duncan, Westbourne Lodge, Otley.

Ducks (Any other variety).—First, J. Dixon. Second, T. C. Harrison Highly Commended, H. Beldon (Calls). Commended, J. W. Scriven, Throstle Nest, Otley.

PIGEONS.

Tumblers (Short-faced).—First, H. Beldon. Highly Commended, A. & B. B. Laycock, Woodville, Keighley.

Tumblers (Common).—First, H Beldon. Highly Commended, H. Endeacott, Hunslet Road, Leeds; G. Stanhope, jun., Eccleshill.

Fantails.—First, H. Beldon. Highly Commended, W. C. Dawson, Weston Hall, Otley. Commended, A. & B. B. Laycock.

Pouters.—First, H. Beldon. Highly Commended, J. Mason. Commended, H. Endeacott.

Barbs.—First, H. Beldon. Highly Commended, A. & B. B. Laycock; T. L. Ritchie, Otley. Commended, J. W. Scriven.

Owls.—First, H. Beldon. Highly Commended, A. & B. B. Laycock. Commended, J. W. Scriven.

Carriers.—First, H. Beldon. Highly Commended, G. Stanhope, jun. Commended, H. Endeacott.

Turbits.—First, H. Beldon. Highly Commended, H Endeacott.

Jacobins.—First, H. Beldon. Highly Commended, H Endeacott.

Any Other Variety.—First, W. C. Dawson (Swallows). Highly Commended, H. Beldon; J. Mason. Commended, G. Stanhope, jun.

Judges.—Mr. E. Hutton, Pudsey, and Mr. C. Dearlove.

CITY COLUMBARIAN SOCIETY.

A meeting of the City Columbarian Society took place on Thursday last at the Crown and Cushion Tavern, London Wall, for the purpose of electing officers of the Society for the ensuing year, when G. Chapman, Esq., was re-elected President; R. Wingfield, Esq., as Vice-President; Messrs. Plaskett, Gillett, and Goode as Auditors; and Mr. J. Ford as Secretary and Treasurer.

It may not be generally known to your readers that the above Society was formed about twenty-five years ago, and its members meet at the above tavern every alternate Thursday (in the season), for the purpose of encouraging the breed and discussing the merits of that most interesting of home pets, the Pigeon. The value of some of the choice specimens will be understood from the fact that they have changed hands in the above rooms at five, ten, and even twenty guineas the pair!

Gentlemen who take an interest in the above will find the Secretary always willing to give them any information they may require.—Columbarian.

PLURALITY OF QUEENS IN A HIVE.

Although Mr. Lowe's communication which appeared in pages 187-8, is exceedingly interesting, especially that portion of it which refers to the plurality of queens, it can scarcely fail to occur to many of your readers, that whilst he discredits the evidence of all other observers, he himself bears witness to the occurrence of the most singular anomalies. Although perfectly satisfied there is nothing Munchausen-like in his statement, I have yet grave doubts as to whether his observations have really been accurately made, and whether his inferences are truly in accordance with facts. I do not think I have ever said anything from which your correspondent could fairly infer my opinion to be that it is not an uncommon occurrence for two queens to be in a hive at one time. I stated only what had come under my direct observation. Nevertheless, there are times when a plurality of queens is more common than at others. For example, if there has been a cessation of labour for some time previous to removal to the heather, and subsequently fine weather sets in under certain circumstances, and for certain reasons, there may be found a plurality of queens.

I am not now, however, disposed to enter into the discussion, or to give a detailed account of how and under what circumstances a plurality of queens is to be found, but will confine myself to asking a few questions in reference to queens living for three weeks together, which is so contrary to the nature of bees, that I can scarcely credit the accuracy of the observations which have been made by Mr. Lowe.

Admitting, then, that an old and a young queen are to be found in one hive at the same time, has Mr. Lowe never seen that sometimes both young and old were dethroned? New laid eggs being in the hive at the time young queens were again attempted to be brought forward, but only to be destroyed, and that at the last moment a few worms were chosen, and successfully reared. Has this never been observed by him? And, again, has he ever witnessed a case in which the old queen was dethroned just at the birth of young princesses, and during the fight for the crown one young one has taken flight and returned impregnated? And if he has observed whether she was well received, and succeeded in establishing herself as head of

the hive; or if she was seized and forced to resign, when another more successful was allowed to reign? If apiarians in general would pay some attention to hives under these circumstances, it might in some cases assist in clearing up a mystery, or what appears to be one, and might also throw some light on cases of a supposed second impregnation.—A Lanarkshire Bee-keeper.

HOW TO EMPTY HONEYCOMBS.

The bee papers of Germany and America are filled with accounts of a discovery by an Italian apiarian, of a method of emptying combs of honey without injuring them. The process is exceedingly simple and consists only in slicing off the caps of the cells, and then causing the combs to revolve on the periphery of a wheel or cylinder, which empties one side of honey—then the other side is turned and emptied. Liquids upon bodies which are whirled or revolved tend to fly off by what is called centrifugal force. In this case the revolution is so graduated that only the honey flies off, and dead bees, bee-bread, &c., remain behind, so that not only is the comb saved, but the honey is purer and better than that strained. The temperature requisite to success, is about 80° Fahrenheit, which is gained in a warm room or on a sunny day.

The value of this invention may be the better appreciated, when it is known that it requires the consumption by the bees, of 15 to 20 lbs. of honey (estimates vary), to make 1 lb. of wax, consequently, that the comb requires for its construction the use of just about as much honey as it will contain when filled. It may be found that in the economy of bee life, it is essential for the bees to make or excrete a certain amount of wax in order to remain in good health; but this is hardly probable, for it has long been the practice of bee-keepers to save empty or partly filled combs with scrupulous care, and give them to the bees, and no bad results have ever been noticed.—(*American Agriculturist.*)

FRUIT ESSENCES.

The products known under the name of Fruit Essences, are alcoholic solutions of different ethers, to which are sometimes added certain acids, or certain natural essences. Glycerine is found in all; it appears to blend the different odours, and to harmonise them. It is necessary to state, that the alcohol used, as well as all the other substances, must be chemically pure.

Each column represents the measures to be added to 100 of the same measure of alcohol.

Names of the Essences.	Chloroform.	Nitric Ether.	Aldehyde.	Acetate of Ethyl.	Formiate of Ethyl.	Butyrate of Ethyl.	Valerianate of Ethyl.	Benzoate of Ethyl.	Œnanthylate of Ethyl.	Essence of Persicot.	Sebacic Ether.	Salicylate of Methyl.	Amylic Alcohol.	Acetate of Amyl.	Butyrate of Amyl.	Valerianate of Amyl.	Essence of Lemon.	Essence of Orange.	Alcoholic Solutions saturated in the cold of — Tartaric Acid.	Oxalic Acid.	Succinic Acid.	Benzoic Acid.	Glycerine.
Pine Apple	1	..	1	..	..	5	..	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..	3
Melon	..	..	2	..	1	4	5	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	3
Strawberry	..	1	..	5	1	5	..	..	..	..	..	1	..	3	2	..	..	..	..	..	..	..	2
Raspberry	..	1	1	5	1	1	..	1	1	..	1	1	..	1	1	..	..	..	5	..	1	..	4
Gooseberry	..	..	1	5	..	..	..	1	1	..	..	..	..	..	..	..	..	..	5	..	1	1	..
Grape	2	..	2	..	2	..	..	..	10	..	..	1	..	..	..	..	..	..	5	..	3	..	10
Apple	1	1	2	1	..	..	..	..	..	..	..	..	..	..	..	..	10	..	..	1	..	..	4
Orange	2	..	2	5	1	1	..	1	..	..	..	1	..	10	..	..	..	10	1	..	..	..	10
Pear	..	..	..	5	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..	..	10
Lemon	1	1	2	10	..	..	..	..	..	..	..	..	..	..	..	..	10	..	10	..	1	..	5
Blk. Cherry	..	..	..	10	..	..	..	5	2	..	..	..	..	..	..	..	..	..	..	1	..	2	..
Cherry	..	..	..	5	..	..	..	5	1	..	..	..	..	..	..	..	..	..	..	..	..	1	3
Plum	..	..	5	5	1	2	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	8
Apricot	1	..	..	..	..	10	5	..	1	..	..	2	..	..	1	..	..	..	1	..	..	..	4
Peach	..	..	2	5	5	5	5	..	5	..	1	2	..	..	..	..	..	..	..	..	..	..	2

—(*Dingler's Polytech. Journal.*)

NON-RESISTING BEES.

I last summer paid a visit to a friend who had a number of hives, of which I purchased several, and had them prepared for removal, when an inspection of the rest of his stock was invited. He remarked that there was one good hive, as it had a honey-box, the contents of which weighed exactly 25 lbs., but there was not much in the rest of the four octagon boxes which the stock inhabited, he having a few days since removed the super, but had replaced it again for the purpose of "no to be fashed feeding," remarking at the same time that for three or four hours after manipulation the other bees robbed it, but had since stopped. Now the fact is that it had been entirely robbed out, and had never made any resistance. This was the more singular as it consisted of two strong swarms joined, and the stranger bees had actually to pass through the three lower boxes ere they reached the super. My friend wondered at it, and asked my opinion. "My experience," I said, "with bees is that to stranger bees, as well as to man, they become docile when well filled with honey. When you removed the super the tenants filled themselves, and would not offer any resistance." I then advised him, when bees were disposed to rob, to remove all supers at dusk, as the bees would then have full time to disgorge themselves, and be ready for defence by the next morning. There are also times, I remarked, when food ought at first to be gradually given, as bees sometimes fill themselves and kept themselves filled as if they were secreting wax, and then they offer little resistance to strangers. That a sudden jerk or even a slight inspection sometimes caused them to fill themselves, and brought them into imminent peril of being robbed.—A Lanarkshire Bee-keeper.

OUR LETTER BOX.

Wioton Poultry Show (*B. W. C.*).—We cannot notice other journalists' mistakes. The reference was evidently to Hamburghs.

Hens Laying (*W. A. O.*).—You can only ascertain by watching them.

Books (*Dickey Bird*).—Mr. Brent's "Canary and Other Song Birds" includes other songsters besides the Canary You can have it free by post from our office if you enclose twenty stamps with your address. "The Pigeon Book" relates to Pigeons only. You can have it sent for twenty stamps. "The Poultry Book for the Many" you can have for seven postage stamps.

Daily Management (*L. T. B.*).—What management do you refer to?

Spanish Fowls (*J. H.*).—We never heard of Spanish fowls being sold for 30*s.* per dozen, and that they are not to be had at that price is evidenced by your advertisement being unanswered.

Ulcers on Spanish Cock's Face (*T. J. P.*).—The red spots and the offensive discharge from same indicate, we fear, that ulceration which is considered incurable. We think it possible to cure it, and recommend you to apply acetate of iron once daily to the ulcers.

Work on Pigeons (*W. Massey*).—We cannot insert your communication. You only repeat more strongly what "Wiltshire Rector" stated.

Lapwings (*J. W. H.*).—We have no knowledge of the mode of catching them.

Parrot, a Feather-eater (*S. Burnett*).—Omit hempseed and bones from the bird's diet, and keep it on soaked bread and fruit, such as apple, figs, raisins, &c. Let the bird have a tepid bath every day, which is usually effected by allowing the bird access to a soup-plate full of water slightly warmed. If the bird avoids bathing pour the water over it through the rose of a watering pot.

Cock Canary Eating the Eggs (*C. C.*).—The best advice we can give is contained in the following extract from Brent's "Canary and Other Song Birds:"—"Some fanciers remove the eggs as laid, substituting a bone or ivory egg till all are laid, keeping the eggs in a cool and safe place, and returning them when the hen ceases to lay. This is very necessary if the cock is inclined to be mischievous, in which case he should be removed, or placed in the compartment of the cage when the eggs are put into the nest. It has also the advantage of hatching all the young at one time." You can have the book free by post from our office, if you enclose twenty postage stamps with your address.

Payne's Hives (*Rev. W. V. W.*).—They may be purchased of Messrs. Neighbour & Sons, Regent Street, or of Mr. Pettitt, Dover.

Propagating Ligurians (*Q.*).—The possession of moveable comb hives is so essential to the artificial propagation of Ligurian bees, that my instructions were based upon the supposition that any apiarian who contemplates following them will first avail himself of the advantages offered by hives of this description.—A Devonshire Bee-keeper.

Insect Preying on the Black Currant (*A Lanarkshire Bee-keeper.*)—We have submitted your sketch and description to an eminent naturalist, who fails to identify the insect. You had better send us a specimen or two by post enclosed in a quill for safe carriage.

Gold Fish.—A correspondent wishes for some information under the following circumstances:—"In the kitchen garden is a largish pond of good water, with a stream flowing through it. At various times, first of all about three years ago, there have been turned into it, about in all, three dozen of these fish. Only about seven now remain, and most of them have grown very large. I have not ascertained one instance of any being bred in the pond, and they gradually diminish. They cannot be stolen, for no one here could dispose of them. When first put in they were all gold colour; several turned white or silver. What is the cause of this? The ice on the pond is regularly broken in the winter. It is about 6 feet deep. There are a few trout in it, not large ones."—W. W. E. W.

POULTRY MARKET.—April 17.

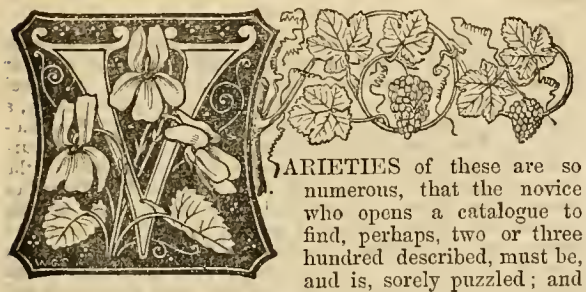
	s.	d.		s.	d.		s.	d.		s.	d.
Large Fowls	4	0	to	4	6	Pheasants	0	0	to	0	0
Smaller do.	3	6		4	0	Partridges	0	0		0	0
Chickens	2	6		3	0	Grouse	0	0		0	0
Goslings	7	6		8	0	Guinea Fowls	2	6		3	0
Ducklings	3	6		4	0	Rabbits	1	4		1	5
Pigeons	0	8		0	9	Wild do.	0	8		0	9

WEEKLY CALENDAR.

Day of Month	Day of Week	APRIL 25—MAY 1, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock after Sun. m. s.	Day of Year.
25	Th	Princess Louis of Hesse Born, 1843.	59.7	37.1	48.4	16	46 af 4	10 af 7	18 af 0	17 af 9	21	2 4	115
26	F		60.1	35.9	48.0	17	44 4	11 7	58 0	14 10	22	2 14	116
27	S	Royal Botanic Society, Third Spring	58.8	35.8	47.3	16	42 4	13 7	34 1	14 11	☾	2 24	117
28	Sun	1 Sunday after Easter. [Show.	60.6	35.7	48.1	16	40 4	15 7	6 2	after.	24	2 34	118
29	M	Anniversary Meeting of Zoological So-	60.8	37.5	49.1	13	38 4	16 7	35 2	23 1	25	2 43	119
30	Tu	[ciety, 1 p.m.	61.3	39.1	50.2	16	36 4	18 7	2 3	38 2	26	2 51	120
1	W	Prince Arthur Born, 1850. Meeting of [Society of Arts, 8 p.m.	61.7	39.7	50.7	15	34 4	20 7	29 3	46 3	27	2 59	121

From observations taken near London during the last forty years, the average day temperature of the week is 60.4°; and its night temperature 37.2°. The greatest heat was 82°, on the 27th, 1865; and the lowest cold 18°, on the 29th, 1861. The greatest fall of rain was 1.40 inch.

BEDDING PELARGONIUMS.



VARIETIES of these are so numerous, that the novice who opens a catalogue to find, perhaps, two or three hundred described, must be, and is, sorely puzzled; and the numberless questions that are asked on this point surely indicate this perplexity. Before considering it, let us see what are our requirements. We must have profuse blooming: this is an essential. Many very fine varieties, fine as pot plants, are comparatively useless owing to their not possessing this quality; for it is of no use to have either a bed or ribbon with a few flowers, however fine, holding their heads up here and there—we must have a mass of rich and glowing colour. Then we must have, or at any rate we generally require, dwarfness and compactness of growth. Tom Thumb won his way into favour by these two qualities, and even now holds his place with many, notwithstanding the smallness of the trusses and the bad shape of the flowers. Then the variety ought to have fine large trusses; small trusses of some ten or twelve pips are not wanted. In the opinion of some it ought to have plain foliage where effect is to be produced by the colour of the flowers; for instance, where the scarlet is to make a contrast with yellow, anything of decided colour in the leaves must take away from the effect.

What Pelargonium in the scarlet-flowered class best fulfils the above conditions? For many years I found Attraction, *alias* Scarlet Perfection, to be the best; but, as I have before said, I think now that Editor, sent out by Mr. Bull, is by far the best in this way; its profuseness of bloom is very great, while the trusses are large, and the pips also large and good. Vivid, another good sort, is too gross in habit. Governor, with very fine trusses, is not free. Frogmore Scarlet is a good flower, somewhat in the style of Attraction. Clipper, with a very marked and decided horseshoe, is a noble flower, but I think hardly free enough in its flowering qualities. Glow is a very bright and lively flower.

Next, taking the rosy pink varieties, we have the old Christine, with its rivals Helen Lindsay and Rose Rendatler. As far as my judgment goes, it is fully equal to either of these, its chief fault being that it seeds so very freely that the seed-pods are often very unsightly. Wiltshire Lass, another flower in this style, came out only last year, and so I have not been able to speak much of its qualities as a bedder; for last season, I think, defied all attempts at fixing the value of any bedding plant. Beauté de Suresnes is a noble flower, but I fear hardly free enough in its flowering qualities.

Of lighter scarlets with a tinge of orange in them, Dr. Lindley is a valuable kind, having a well-shaped flower, a large truss, and being a tolerably free bloomer. Excellent is a good light scarlet flower, and very free; it makes a capital bed. Of the salmon-coloured varieties Madame Rendatler, Paul Labbé, and Prince of Hesse are about the best, and any of them will not fail to give satisfaction. They are not new, but as yet I have not seen any of the newer varieties, excepting, perhaps, Eugénie Mézard, which is very good. Lucius is a bright salmon rose, and made a very effective display at Battersea. There is a large number of the varieties in the Madame Rudersdorff style, which hardly, I think, come under the designation of bedding Pelargoniums: they are too delicate in their colouring for that purpose, though admirable for pot culture.

I am constrained to say as to whites, that not only have I as yet seen none to beat Madame Vaucher, but that I think it would be perfectly easy for any one who received an order for White Perfection, Madame Barillet, White Tom Thumb, &c., to execute it from plants of the old variety. Report speaks highly of a dwarf variety of Mr. Groom's, of Ipswich, called Floribundum Nanum, but of this we have yet to judge. After all, are white-flowering Pelargoniums of any use for bedding? They certainly are not if you want to have a white bed; and the colour is so soon dashed by the rain, that it is sure to look dingy if we have any bad weather.

Amongst the Variegated bedding Pelargoniums I take the Tricolors first; and here I must own that as yet nothing has come up to Mrs. Pollock as a bedder. It will not do in cold and wet soils and in damp situations; but wherever it is light and airy, and the soil either naturally rich and well-drained or made so, nothing can be more beautiful. It will take abundance of well-decomposed dung, and should be planted closer than many other kinds if an effective display is wanted. Others, such as Lady Cullum (Henderson), and Meteor (Saltmarsh & Son), bid fair to rival Mrs. Pollock; but as yet I cannot say, as they are hardly to be looked on as bedding plants at 21*s.* a-piece.

Among the Golden-leaved varieties I think Golden Fleece must bear away the palm; so any one who saw it at Battersea would be, I think, constrained to say. It is freer in its habit than Cloth of Gold, and has more of the golden colour than Golden Chain, which, indeed, is more of a golden-edged than golden-leaved variety.

Of Silver-edged varieties I have as yet seen nothing that surpasses Queen of Queens, Bijou, and Flower of Spring. The first of these has a very bright silvery edge, and the flowers are well-shaped and bright scarlet. Bijou has also scarlet flowers, is very free in its habit, and for strong soils perhaps a little too much so; while Flower of Spring is a beautifully compact-growing plant, with a well-defined silvery edge, and a bright pink well-shaped flower. Although there is a large number of other varieties, I know of none which as yet are to be preferred to the three named.

Of the Silver Tricolor-leaved varieties, I do not think any are suitable for bedding. Many of them, as Italia Unita, are very delicate in habit, and lose their distinguishing characteristic—the beautiful pink or crimson

zone when grown out of doors. As pot plants nothing can be more beautiful; but I am not now dwelling on pot plants, but on those suitable for bedding purposes.

It will be noticed that I have said nothing upon Nosegays. The truth is, I have not yet overcome my prejudice against them. I mean, however, this year to try a few, and see whether, when constantly under one's eye, the prejudice against them may not wear off. I am ready to admit the variety of shades of colour amongst them, shades as yet not obtained in the Zonal section; but I do not like their raggedness, nor do I see that they are more free in flowering or more enduring than the Zonal section.

I do not doubt that many will differ from me in the conclusions I have come to. I can only say that they have been formed on rather a wide acquaintance, and that, having seen the varieties in many places, those I have named seem to me, taking all the requisites into consideration, to be the best. Let us hope that a more favourable season than last will enable us to judge concerning many of the newer varieties, which as yet we have been unable to do.—D., *Deal.*

A CONTINUOUS SUPPLY OF CUCUMBERS.

Much has been said, and well said, about the cultivation of Cucumbers, their diseases, and their failures in the winter time. It is no easy matter under many circumstances, even with good appliances, to secure a regular supply at all seasons, especially in winter; the plants require careful tending at all times, and I have known many failures, even in spring and summer, when the means were limited.

I do not for a moment suppose that there is anything novel in what I am now advancing about the cultivation of Cucumbers in winter, but it may be useful to describe a method founded on long practice, and which has attained the object aimed at—namely, a supply all the year round, though I have not, like many of my more favoured brethren, a house specially devoted to the cultivation of Cucumbers. I have a fruiting Pine-stove heated on the Hamiltonian system; hot water flowing in cemented tanks or gutters, covered over with blue slates, supplying the bottom heat. The house is a lean-to, ventilated back and front with sliding doors, but there is no ventilation at the top. Along the back of the house is a path, and a tank or gutter runs parallel with it to give off a certain amount of top heat; over this tank is constructed a trough or box, and a space of about 9 inches is left from the top of the tank to the bottom of the trough or box, which forms the future Cucumber-bed. This receives bottom heat from the tank, as well as from the side of the bed in which the Pines are planted out. The place for the bed is about 20 inches deep, and the bottom is pierced with holes to permit the water to escape; these are covered with large hollow crocks, and the bottom with 4 inches deep of broken bricks or other rough material as drainage, a proper amount of which is very essential for the future well-doing of the plants. Above the drainage is placed about an inch of rough charcoal, and over it moss or some other covering.

We are situated near a river, and the soil being of a heavy retentive nature we are obliged to add to it many ingredients to keep it porous. For Cucumbers I form the compost as follows:—I procure the best turfy loam which is to be had, lay it up in a stack for some time previous to use, and to each bushel of this roughly broken I add half a peck of good sound leaf mould, one peck of thoroughly decomposed dung, half a peck of charcoal dust, a sprinkling of bone dust, a little soot, and a small quantity of river sand to keep the mass open. The whole being well incorporated together, I have a porous compost through which the water passes quickly. This, in my opinion, is one of the first steps to success.

The place and soil for the bed being ready, we put in an upright rod, and fasten it to the rafter to tie the plants to as they advance in growth. We allow the plants a certain space to each by placing a partition between them, so that in case of need a plant can be removed without interfering with its neighbour. This being done, the soil is put into as many spaces as are required, placing the roughest portion of the compost at the bottom, and making the soil about 10 inches deep, so as to leave room for top-dressing with rich compost when the plants require it. The bed is allowed to remain a few days before planting, in order to acquire a genial temperature; and when this is the case the plants, which have been previously prepared, are planted about the end of September. After planting, a gentle watering with tepid water is given, using a little weak liquid manure water as occasion may require. As they advance in growth they are secured to the upright rods until they reach the rafters, and are then trained over the pathway to rods fastened to the rafters and extending the whole length of the house, forming when in fruit a sight well worth seeing.

By the above mode of culture, and other means, I secure a supply of Cucumbers throughout the year without disease or those unsightly club-like fruit so often complained of. When other Cucumber plants come into bearing in spring, those grown for winter production are taken away and renewed in the autumn, as I prefer young plants, so that I have no experience to relate about stems as thick as walking-sticks, or lasting for years. I have practised this system for years, and it has answered the purpose intended; and I shall be happy if the facts stated prove of service even to one individual.—Veritas.

At this place I have charge of a small house, 11 feet long, 11 feet wide, and 8 feet high at the back. There is a bed or pit in front for Cucumbers, 11 feet long, 3 feet wide, and 3 feet 6 inches deep. The house is heated by six pipes—namely, a three-inch flow-and-return at the back, a two-inch flow-and-return in front, and in the pit, 6 inches from the bottom, four-inch flow-and-return pipes, respectively 6 inches clear of the front and back walls of the pit, with an interval of 15 inches between the pipes. Above the pipes there is an 18-inch chamber, six pillars, 6 inches square, being built from the bottom, and two wattled hurdles placed lengthwise upon the tops of the pillars. On the hurdles are laid a few rough branches or faggots opened out, and then some good rough soil of a light nature mixed with rotten dung and leaf mould. This house was put up two years ago last summer, and since then I have had very good fruit. From November, 1865, to the end of May, 1866, I cut some hundreds of Cucumbers. I then pulled up the plants, cleared out the old soil, and gave the house two good coats of whitewash, hot lime, and sulphur mixed together. Fresh loam, stiffer than for Cucumbers, was then put in, and some good strong Melon plants planted where Cucumbers had been. Plenty of fire heat was afforded, and attention was paid to syringing and applying manure water, and the result last summer was a crop of nineteen good fruit.

After the Melons are over the house should be again cleared out, and strong Cucumber plants planted by October to produce in winter and spring. After planting water rather sparingly, and as the plants become stronger give them a little weak manure water; but when they begin to bear increase the strength.

For the last two months I have given my plants about ten gallons of strong manure water, and on the 23rd of March I counted sixty fruit, from 3 to 15 inches long, whilst some of the leaves were 13 inches across.

I do not much approve of the tank system of Cucumber culture, especially for winter. It has failed at several gentlemen's places near Bath, after the plants were about 8 feet long. It appears not to afford facilities for enough of drainage, for the roots going down to the hard tank, owing to watering, become rotten, and the plants die. If I had charge of a Cucumber-house with a tank, I would place boards on bricks so as to form a chamber 6 inches, or, better, 1 foot high (or several faggots might be used instead of boards), and on this platform I would place soil for the plants.—G. L. Drummond, *Gardener, Highbridge Hill, near Bath.*

TRAINING VINES.

Will Mr. Thomson kindly explain in your Journal the position of the summer shoots on his Vines, with the rods or stems 2½ feet apart; also, how short they are pruned in the winter, as most of the Vines I have seen are from 40 to 42 inches apart? Secondly, What weight of Grapes from a rod 19 feet long, does he consider to be a good crop, in April, in June, and in August; or will the Vines at each season bear an equal weight?—G.

[In reply to "G.," let me say, that he will have observed that I advise that two rods should be grown from each Vine, "not closer together than 2½ feet." If he finds this too close he can give them a little more space. I grow them so in several houses, and wider apart in others; but writing principally to guide amateurs who have not much space to spare, I

gave the minimum, and I find no difficulty in growing Vines so. An amateur who lives close by me, who produces splendid crops of Grapes, and who took some of the leading prizes at the great show in Edinburgh in 1865, grows them even closer than 2½ feet. The position of the lateral shoots, starting as they do at an angle of 45° from the parent stem, is, that their points cross each other, but this causes no difficulty when one lateral only is allowed to grow from each eye, and the eyes are 12 inches apart on the average. I prune to the bud at the base of the lateral.

Of Grapes ripe in May, I would consider 40 lbs. a good crop for rods 19 feet long, and 3½ feet apart; if ripe in September, 50 lbs. If grown 2½ feet apart I would allow a deduction of 10 lbs. in each case.—Wm. Thomson, *Dalkeith Park.*]

ORIGIN OF TRICOLOR PELARGONIUMS.

In addition to the beauty of the foliage of Variegated Pelargoniums, there is an interest in their production as an aid to a solution of the mysteries of hybridisation and variegation, and however opposite the deductions of operators, a record of their experience will always have a high value.

Your latest correspondent on this subject is Mr. Pearson, and he adds to his useful remarks an apparent objection to the connection of scientific inquiry with the practice of cross-fertilisation for new forms and colours; that such an objection cannot be really intended must be obvious, for Mr. Pearson had just advanced good reasons for his selection of plants for fertilisation. In the same way the Mr. Smith, of Dulwich, that he names, does not deal haphazard with pollen and pistils. I know well Mr. Smith's careful combinations, his unwearied care, and the beauty of the result. It is an acknowledged truism that the more we know the better will be our practice. Investigation conducted in a scientific spirit cannot fail to give new truths that will admit of wider application than mere Pelargonium culture.

With reference to the Zonal Pelargonium leaf, Mr. Pearson remarks, "that from some unknown cause the dark colouring matter has turned red, and that this tendency becomes hereditary." Let us endeavour to make a step towards this "unknown" cause, it may be but a very short one, but it will be an advance.

Yellow, red, and blue, and their combinations in their infinite variety, give us the whole range of our experience of colour; and a leaf of the Zonal Pelargonium in its so-called green state contains within itself the three primary colours—yellow, red, and blue. For example, sketch the outline of the leaf, mark thereon the zone in red; then, with a transparent colour, cover the whole within the outline with yellow; the result is a yellow leaf with an orange zone. Again, cover the whole with blue, and, if the proportionate depths of tint have been duly observed, the appearance of a green leaf will be produced with a zone of dark ill-defined colour. The beauty of the Tricolor, whether white or golden, depends upon a disturbance of the proportion of the three primary colours. A partial removal of the blue gives the golden ground and the brilliant orange or red zone, and the partial absence of the three colours leaves a white ground. The specimens upon which changes are required should be treated for combinations as the pigments in the artist's colour-box, and but for the many yet imperfectly investigated causes, the certainty of tint in the cultivator's hands would be equal to the artist's; but with both much will have to be studied before a desired result can be produced—the influence of sex, the unknown tendencies to hereditary re-appearances and divergences, the singular production of new colours by sporting, as it is vaguely termed, instead of direct from the seedling stock, together with atmospheric and actinic influences, all tend to veil this subject with the mystery attendant upon uninvestigated causes; still a glimpse of light can be obtained, and by its guidance the production of a Tricolor or Variegated Pelargonium is not the mere chancework it is usual to consider it.

With a better knowledge of animal physiology the greyhound-breeder, alluded to by Mr. Pearson, would obtain better results, with fewer puppies and less hanging. When vegetable physiology becomes better elucidated, in the like manner the gardener will have less necessity for large seedings and fewer contributions to the rubbish-heap. My own experience has been that, with some attention to the laws of colour, I have with a very few seed-pans been able to follow very closely upon the largest Pelargonium growers.

Mr. Pearson observes that no single plant of this class was antecedent to Mrs. Pollock. I am sure he will pardon a correction of this statement. The first Golden Tricolor I saw was raised some fifteen or twenty years ago by Mr. Basket, of Blackheath, and appropriately named Rainbow. I cultivate it still, and largely, for its splendid truss, in the borders; in early spring, the crimson zone on its yellow ground has not yet been surpassed. As summer advances the green predominates. From Rainbow a sport was shortly after produced with a silver ground, a forerunner of Italia Unita; this plant still holds its place in the catalogues as Burning Bush. From these plants, long previous to Mrs. Pollock, seedlings of merit have been raised at Mr. Hally's Nursery, Blackheath. This Rainbow must not be confounded with a second and later plant of the same name, and altogether distinct from it.

I notice this as pure matter-of-fact, and without the slightest intention to detract from Mr. Grieve's claim, should he make it, to a different origin for his splendid seedlings. For the pleasure they have given me I am under a deep obligation; and I wish, for the light he could throw on this subject, that we knew more of the history of his unrivalled plants.—M., *Deptford.*

P.S.—Since writing the foregoing, I have had the great pleasure of reading Mr. Grieve's remarks in your last. They so perfectly take precedence of the little I can add to a knowledge of this subject, that I leave it to your discretion whether my notes should appear. If inserted, I wish to say also, that though it would be presumption on the part of a mere experimentalist to differ from a master upon a point of practice, yet upon a point of theory important to the question, Mr. Grieve will, I hope, receive the following correction in the spirit it is offered.

Mr. Grieve, states that "knowing, as I did, that the mingling of brown and yellow will produce red," he proceeded to experiment on this basis. Now red being a primary colour, it follows in theory that no combination can produce it, and any attempt in practice must fail; the after-reasoning is consequently unsound. The yellow margin under the brown zone would not produce red, as Mr. Grieve supposes. This can be proved by placing two transparent mediums of those colours over each other. In fact, the zone appears brown on account of the junction at that part of the three primary colours, as I have endeavoured to explain before, and wherever the blue is abstracted the yellow takes the place of the green, so to speak, and the brown becomes red, or rather orange red. In practice Mr. Grieve has admirably redeemed this little slip, by so ably selecting the means of abstracting the blue, and releasing the splendid combination of yellow and red, as exemplified in Lucy Grieve, &c.

A further removal of yellow developes the zone into carmine, but it is at the expense of endurance to the leaf; it rapidly loses its ground. The great point to combine beauty with vitality is to secure a rich orange ground, the best example of which that I know, is Golden Pheasant, the best bedding plant of this colour I have seen. It increases in size and beauty of colour by exposure in the open borders.

If correct in the foregoing, I deduce this, and offer it as a suggestion to growers—in changing a green leaf to variegation nothing is added, it is a matter of abstraction, more or less simply; and if this be true, it would certainly smooth the path to yet more brilliant combinations of leaf-colour than we now possess.—M.

LEGUMES FROM MADAGASCAR.

Some two months ago a vessel called the "*Wild Wave*," arrived from Madagascar, being the first ship from thence to this port, with an assorted cargo of the produce of the island. Besides sugar, coffee, rum, 18,000 mats, most beautifully made, and 2000 straw hats, as good as the best Leghorn, there were some bags of Beans, Peas, &c., the latter only sent as samples. I bought these by auction, and I have been giving them away amongst my horticultural friends. I send you a small sample of three kinds, marked 1, 2, and 3, and shall be glad if you can throw any light on their uses, if they can be used as a vegetable, their names if possible, how they should be planted, and on what sort of soil. I have about a bushel of each left. If you think them likely to do well in this country, I should be glad to send any person who would like to try them, a small package of each on receipt of thirteen stamps. The mats and hats were sold by auction at 6*d.* each.—George F. Martin, *Broad Green, near Liverpool.*

[The first commercial venture from Madagascar to Liverpool is highly interesting. The samples of seeds sent are

—No. 1, a Bean almost globular, and in size and colour resembling the largest, smooth, white garden Pea. No. 2, are seeds of a Phaseolus, and they resemble very closely those of a liver-coloured black-speckled Dwarf Kidney Bean. No. 3, are also, we think, seeds of a pygmy Dwarf Kidney Bean, or some genus nearly allied to Phaseolus. They are rather larger than Laburnum seeds, and dun-coloured. We recommend those of our readers who have hothouses or warm greenhouses to avail themselves of Mr. Martin's offer. The plants may prove as hardy as our Kidney Beans. We suspect that like similar legumes in India, the seeds are cultivated for the oil they produce.—Eds.]

SOIL AND TREATMENT FOR CAMELLIAS.

I have read the accounts of the various methods of cultivating the Camellia given since Mr. Pearson told us that the best soil to grow it in is fresh turfy loam pared off the surface of the field and used on the day it is cut; and I am very glad, although I was doubtful of it at the time, that such a simple method seems to grow the plant so successfully.

Camellias are indispensable for the decoration of the greenhouse and conservatory, and almost every owner of a glass structure likes to have a few of them; but we do not always find them in a thriving condition.

In the Journal of April 4th Mr. J. Harris says Camellias are semi-aquatics, and that he cannot obtain bloom if he uses loam in the soil. I will relate my experience with them, and detail the mode of treatment by which I have found them succeed best.

The first Camellias I had under my charge were grown in a small greenhouse of the half-span description and facing the west; a stage all round the house and a table in the centre completed the internal arrangement, and on the back stage the Camellias used to be placed during the growing season. The only soil that could be obtained was peat earth. The soil of the small heaps which the moles threw up as they burrowed underground was collected, brought home, and used at once; and in this the plants grew very satisfactorily, making beautiful dark green foliage, but producing only a moderate quantity of bloom.

My next experience was with plants grown in turfy loam not fresh cut, but they did not succeed so well in this as those previously noticed. The foliage was of a lighter green, and when the plants were turned out of the pots the roots had not the same healthy appearance. They made their growth in a lean-to vinery, and were not, I think, effectually shaded from the direct rays of the sun. Shading is of great importance in the cultivation of the Camellia. I always shade the plants after the 1st of April; those in the greenhouse are shaded to prolong the bloom, and those making their growth to prevent the leaves from being blistered or burned, and consequently rendered unsightly. The shading used is of the lightest description—No. 1 tiffany; it is to be obtained in pieces 20 yards long and 38 inches wide, at 7*s.* or 8*s.* per piece.

Part of the collection here has been moved to the second vinery, which has been lately started, where the plants have a temperature of 55° at night, and the remainder are also placed there as they finish blooming. They are syringed twice a-day, at 6 A.M. and at 3 P.M.; in bright sunshine they are dewed overhead two or three times in the course of the day; under this treatment they grow freely.

As soon as the buds are set the plants are taken to the potting-shed, and those that require potting are potted; the soil I now use for this purpose is two parts turfy peat and one part yellow loam, with some silver sand and broken charcoal mixed with it. I have used crushed bones, cow and other manure; but I never do so now, as I find the plants succeed better without the addition of manure. I never even water them with manure water.

I used to shift the smaller-sized plants every year; but I found such sorts as Henri Favre, Jubilee, Mathotiana, and some others, did not open their flower-buds. These being very hard at the time of opening, the inner petals in trying to expand burst and split the outer ones, and none of the flowers opened properly. This occurred in two successive seasons; but last summer I did not shift any of the varieties having this fault, and this season all the above have opened their flowers to perfection. If the drainage is all right Camellias will flower better in the second year after they are potted than they will in the first. I rarely find the drainage of my plants defective, as I never set them out of doors; consequently they are never at any time drenched with rain, and worms cannot find their way into the pots.

Camellias require more water while making their growth then they do at other times; but even then I am careful not to water them until they actually want it, and I may here state that over-dryness at the roots is quite as injurious as too much water.

Camellias, like other plants, require attention, and those who wish to grow them well must attend to them every month in the year; inattention to watering will cause the flower-buds to drop, and if the plants are not shaded from the direct rays of the sun the foliage will be rendered unsightly. I generally have to thin out two-thirds of the flower-buds. My plants were never better here than they have been this season, grown in the compost and treated as I have described.—J. Douglas.

ROSES AND OTHER FLORISTS' FLOWERS

AT THE ROYAL HORTICULTURAL SOCIETY'S SHOW.

Anything more wretched, each in its way, than the Society's two Spring Show days this season it is well nigh impossible to imagine. More 's the pity, for more creditable exhibitions could not well be imagined for so dreary and gloomy a winter as it has been. Roses especially were wonderful, and in some of the collections the very *ne plus ultra* of growth. Take, for instance, those with which Mr. Turner gained the first prize for nine; they comprised Souvenir de la Malmaison, this was not up to the mark; Madame Falcot, a magnificent plant, with every bloom just in its perfection; Général Jacqueminot; Souvenir d'un Ami; Celine Forestier, the best pot specimen of this not-very-free-flowering Noisette that I have ever seen; Vicomte Vigier, good; Senateur Vaisse, very fine; Charles Lawson; and a splendid plant of Baron Adolphe de Rothschild. Mr. Wm. Paul had Victor Verdier, Madame Villermoz, Mrs. Wm. Paul, Jean Goujon, loose; Anna Alexieff, Madame de Stella, Celine Forestier, Gabriel de Peyronny, and John Hopper. Messrs. Paul & Son were third with Comtesse Cecile de Chabrillant, Lord Clyde, fine; Madame Wood, Alba Rosa, Charles Lawson, Souvenir d'un Ami, Madame Villermoz, Senateur Vaisse, and Anna Alexieff.

For new Roses of 1865 and 1866 Mr. Wm. Paul was first with Alfred Colomb, a fine flower; Alba Mutabilis, loose; President Mas, thin; Madame Rousset; Mademoiselle Marie Rody, a splendid Rose; Mademoiselle Berthe Levêque; Elizabeth Vigneron, rough; Fisher Holmes, bright but thin; Pline, thin; Comte Alphonse de Serenye, large, loose; and Mademoiselle Eugénie Appert. Mr. Charles Turner was second with Duchesse de Caylus, very fine; Elizabeth Vigneron; Charles Wood, fine; Mademoiselle Marguerite Dombrain, Marguerite de St. Amand, Madame Eugène Appert, Aurore Borćale, good; Alba Mutabilis, Maréchal Niel, very fine; Dr. Andry, very fine; Camille Bernardin, very fine; Exposition de Brie, very fine. Messrs. Paul and Son had Joséphine Beauharnais, very fine; Alfred Colomb, fine; Princess Mary of Cambridge, good; Pline, thin and rough; Mademoiselle Marguerite Dombrain; Jean Lambert, good; Charles Rouillard, Elizabeth Vigneron, Mademoiselle Berthe Levêque, Madame Fillion, good; Madame Moreau; Maréchal Niel, very fine.

For single specimens Mr. Wm. Paul was first with a nice plant of Madame Alfred de Rougemont; Mr. Turner second with François Lacharme. Of Amateurs Mr. James was the only exhibitor with small plants of Madame Falcot, Jules Margottin, John Hopper, Anna de Diesbach, Souvenir d'un Ami, and Victor Verdier.

Judging from the plants exhibited, the following are the best of last year's Roses:—Amongst dark-coloured flowers, Alfred Colomb, Exposition de Brie, and Madame Marie Rody; of rose-coloured varieties, Joséphine Beauharnais, and Mdlle. Marguerite Dombrain; and of yellows, Maréchal Niel. Messrs. Lane, of Berkhampstead, did an act of kindness to Rose-growers by exhibiting some plants of many of the new varieties. Grown as they were and forced hard, it is impossible almost to judge of the merits of Roses; but as all were subject to the same conditions one could just judge comparatively, and unquestionably my supposition that Antoine Ducher would prove to be one of the best Roses, if not the very best Rose of the year, is justified by the plants exhibited. It was by far the best—a large-petalled flower of great substance, and of a good fresh colour. Bouton d'Or and Madame Margottin amongst Teas promised well, and so did Gloire de Montplaisir, H.P., Madeleine Nonin,

and M. Plaisançon; but all who know what grafted plants of two or three months old are, will understand that much could not be predicated of them.

The season has been backward and unfavourable for Auriculas, and a poorer lot I have not seen staged for some time. Mr. Turner's were, as usual, the best, but he must have been hard up when he put Gorton's Stadtholder and Pillar of Beauty into his collection of twelve. Besides these two old and worthless flowers—worthless, that is, in the eyes of a connoisseur—he had Richard Headley, grey, fine; Lady Richardson, rough; Sims's Eliza, self; Ashton's Prince of Wales, Fletcher's Mary Anne, Lightbody's Meteor Flag, Lightbody's Fair Maid, Read's Miss Giddings, and Clegg's Crucifix. Amateurs were still more mediocre. Mr. James was first with Union, Anne Smith, True Briton, Ne Plus Ultra, Lycurgus, Lovely Anne, and Eliza. Mr. Butcher was second with Imperator, Mrs. Sturrock, General Neill, Conqueror of Europe, Countess of Wilton, Delight, Smith's Emancipator, and Black Prince. Of Alpines Mr. Turner had a good collection, chiefly his own seedlings—Brilliant, Defiance, Fire King, Ralph, Saturn, Topaz, Norah, Selina, Leo, Nero, Mabel, Edwin, Brutus, Sparkler; and Conspicua, Dazzle, Brutus, and Lord Lee, older varieties.

In Polyanthus Mr. Wiggins, gardener to E. Beck, Esq., of Isleworth, sent some very fine plants of Model, Unique, Dark Beauty, Elegans, Little Pet, and Butterfly, all fine, but, I am sorry to say, still unattractive to me. Mr. James, gardener to W. F. Watson, Esq., of Isleworth, had some fine Pansies in pots, also some excellent cut blooms. Those in pots were J. B. Downie and Miss Hill, yellow grounds; Princess of Wales and Cupid, white grounds; and Rev. H. H. Dombrain, Black Douglas, and Rev. J. Dix, dark selfs. Amongst his cut blooms were Masterpiece, Rev. H. H. Dombrain, General Lee, Concord, George Wilson, Norma, Attraction, Cupid, and Masterpiece.

Amongst seedling florists' flowers there was not much. Perkins's Queen Victoria Tricolor Pelargonium promises to be a valuable addition to this most fashionable and popular tribe. Lavinia Maggi rosea, a sport of that fine Camellia Lavinia Maggi, appeared to have lost in shape and substance by the sporting. A seedling Alpine Auricula called Emma was good in shape, not remarkable in colour; and Mr. Fairbairn's Cineraria Beatrice seemed to be a large and showy flower, and very free-flowering, although not very strong in habit, apparently. A golden-leaved variety of Pelargonium called Jason also promised well: it was exhibited by Mr. W. Paul.

Other florists' flowers there were, such as Azaleas and Amaryllids, but they have already been described; and I think it is hard now to say what is not a florists' flower, for the hybridiser is making inroads in all directions, and we shall have to give up a term which ceases to be definite.—D., *Deal.*

CAMELLIA CULTURE.

If I understand Mr. Pearson's letter which appeared in your last issue, he seeks to establish two propositions.

1. That *he* can grow Camellias.
2. That *I* cannot grow Camellias.

As to the first, I am glad to hear him say that he is so successful in his culture, no matter how he does it, although, according to my observations and experience, his practice is calculated to grow leaves rather than flowers. "Dark Laurel-like bushes amongst which you might have hidden a bullock" are not what I want, nor do I think they are exactly what the public in general want. Mr. Pearson is, apparently, not aware that his is the old way of doing these things, at least I practised it when a boy, and abandoned it when I began to inquire the why and wherefore of this and that practice. There are, however, often different and apparently diverging roads leading to the same goal, and I have no wish to depreciate the honest efforts of any fellow-labourer, however humble.

The second proposition I cannot, for business reasons, allow to pass unchallenged, lest it should be believed I send purchasers of Camellias to his nurseries instead of to mine. I have now some thousands of young Camellias grown according to my rules, of which I will not boast, but invite Mr. Pearson and the public generally to come and see them. Mr. Pearson will not, I hope, attribute it to any want of courtesy that I decline to embark upon the sea of controversy. The course I have marked out for myself, from which I must not be drawn aside, leaves me no leisure for such labour. Perhaps, too, the public may regard as a higher proof of the soundness of my rules than any mere assertions or assumptions of mine, the facts that the first prizes for twelve Camellias were awarded to me both at the Royal Botanic and the Royal Horticultural Societies' Exhibitions this year, which Exhibitions are open to the whole world.—William Paul, F.R.H.S., *Paul's Nurseries, Waltham Cross.*

THE BLUE PRIMROSE.

The blue Primrose certainly is a Primrose, but one in which the blue colouring matter, present in all red flowers, is by the strange chemistry of Nature either more than usually predominant, or is modified by the same power so as to simulate an alkaline reaction. Although this curious plant, like many other long-cultivated garden subjects, is barren as a bearer of seed, yet its pollen will fertilise other Primroses. The produce is a race of curiously-coloured plants, not so blue nearly as the parent, but giving true evidence of its origin in shape, habit, and marking. They also turn very blue after a frosty morning. Some other red Primroses, however, do the same, showing that the blue matter is only masked by another influence, and ready to appear under altered conditions.—R. T. Clarke, *Welton Place, near Daventry.*

JOTTINGS FROM CANADA.

I have read with much pleasure the various contributions on Potatoes and their culture, which have appeared in the columns of "our Journal" since the advent of the new year. Like "D., *Deal,*" Mr. Dobbie, Mr. D. Thomson, and others, we have found that medium-sized sets, planted whole, have produced the best return. In our climate, a very warm and dry one in summer, the system of planting on the flat is greatly to be preferred to the ridge system, as the ridges, particularly when with manure underlying them, are very apt to dry up.

In our markets no value is placed on the earliest varieties of Potatoes, such as the Ash-leaved Kidneys or the early round sorts, for unless size is attained the crop is unsaleable, quality for early kinds not being taken into consideration. We cannot, for fear of spring frosts, plant in the open ground until the beginning of May; but for all this can turn out very fair-sized tubers by the beginning of July. I imported eighteen varieties from England last spring. The tubers were very much shrivelled when they arrived, and had sprouted much, so that they were not in a fit state to give a first-rate return, and many kinds suffered sadly from disease in consequence of the protracted autumn rains. The best among the lot was Milky White, which yielded well, was first-rate in quality, and entirely exempt from disease. This will, I think, prove very valuable in Canada. Next came King of Potatoes, a good cropper, handsome in appearance, of fair size, and free from disease. Webb's Imperial and Gloucestershire Kidney produced a splendid crop, but rotted badly. Flour Ball, Dalmahoy, Forty-fold, Pink-eyed Regent, and Improved Early Shaw turned out well, but were considerably diseased. White Rock will be a useful sort for field culture, as it crops well and comes out sound; but is too deep in the eye to be handsome. Ash-leaved and Lapstone Kidneys, Golden Globe, and Myatt's Prolific were all too small; but I shall try them again, and, with better-conditioned sets, shall look for better results. For quality Lapstone Kidney and Milky White are at the head of the list.

We have an orchard of three thousand Pear trees on the Quince and about five hundred on the Pear stock, now three years planted, and well furnished with fruit spurs, consisting principally of Duchesse d'Angoulême, Louise Bonne of Jersey, Easter Beurré, Buffum, Nouveau Poitean, and Beurré Diel on the Quince, trained as pyramids; and Williams's Bon Chrêtien (or Bartlett, as it is called here), Flemish Beauty, Beurré Clairgean, Sheldon, and Seckle as standards on the Pear. Our experience has proved that the trees should be planted so that the junction of the stock and scion comes just to the surface of the ground. If the stock is exposed it soon becomes hardened, and the growth of the scion greatly exceeds it, producing a protuberance, and the tree falls into bad health. I have never yet seen roots thrown out by the Pear above its junction with the Quince, even when covered with soil, although it is quite possible such may occur. Our trees are all budded, and the soil is a stiff black loam overlying the clay. The pyramids on the Quince stock are planted 10 feet apart, standards at 15 feet apart.

We, too, have a vineyard, but very different from that at Garston. Our border is that prepared by Nature, our vinery

a ten-acre field, planted with the American hardy native Grapes, of the kinds called Concord and Delaware, the first a black and the latter a red sort. Our Concords, however, would meet with a poor sale in Covent Garden, on account of the intolerably "foxy" flavour which they possess. The Delaware is a trifle better, but neither of them would suit an English palate unless, as is the case here, a taste for them were acquired. In this neighbourhood there is a good demand for the fruit, and the Vines will produce yearly from two to four tons of Grapes to the acre. They are trained upon upright trellises, and planted 8 feet apart.

I shall also plant out in June about two thousand plants of the Orangefield Dwarf Prolific Tomato. From a small packet of seed obtained from Mr. Williams, of the Paradise Nurseries, we grew last season about twenty bushels of fruit, and being so favourably impressed with it we saved a quantity of seed, from which we are raising plants for this season. It is dwarf, early, very prolific, and of excellent quality, and we hope to ship some hundreds of bushels to Toronto and other markets, where the fruit is in great demand.

The reports of the fearfully cold weather experienced in England fairly make one shudder. Our long, dreary Canadian winters bring about a great dread of cold. The mercury has not sunk lower than 10° below zero with us this season; but it sometimes goes down to 30° below, but not often in this part of the country. The monthly average mean temperature of the winter months at Toronto for twenty-five years is as follows:—December, 26.20°; January, 23.61°; February, 22.99°; March, 29.86°. The high maximum temperature attained makes this appear warmer than it really is, as the maximum counteracts the minimum, which is very low. The extremes are very great, the mercury rising to 50° and falling to 10° below zero in a few hours. In the course of a day and night I have observed a difference of 80° in the temperature, rising from 20° below zero to 60°, causing a rapid thaw and great floods, and much discomfort to both animals and vegetables. In spite of all this we manage to keep poultry, although Spanish are soon deprived of their combs and wattles, and even the hardy Game suffer. Our little English Game Bantam cock had to succumb during a "cold spell," as the natives term it, to the great grief of the household, for, like "Wiltshire Rector," we have a weakness for Bantams. "Dick" was a noble little bird, full of pride and courage; but Jack Frost was too much for him. A native-born son of his now supplies the vacant place, but is not looked upon so favourably as the little Englishman.—W. T. Goldsmith, *St. Catharine's, Canada West.*

CONIFERÆ AT BASING PARK.

A few days ago I visited that charming place, Basing Park, Hants, the residence of W. Nicholson, Esq., M.P., who has a collection of Conifers, comprising nearly two hundred different species. Although many of them are new, and otherwise delicate-growing sorts, I was much astonished to find that not one of them, with the exception of the Wellingtonias, which looked a little bronzed, had experienced the slightest injury from the severity of the late winter; while among the ornamental flowering trees and shrubs which are distributed over the noble pleasure grounds, a fine specimen of Garrya elliptica was completely destroyed, besides many of the Roses. I was informed that the lowest temperature at Basing Park was 2°, or 30° below freezing, and that it occurred on the morning of the 30th of January; on the morning of the 4th of January, the temperature was 2° higher, or 28° below freezing—certainly enough to try the hardy qualities of most plants. Such a winter as the past has enabled us to distinguish many so-called hardy species from those which are really so, whether Conifers, or flowering trees and shrubs; even what may be termed the delicate-growing sorts of the former far excel most of the latter in hardiness.

While referring to the hardiness of Conifers, who, I ask, would like to be without a collection of these graceful and beautiful plants? I do not consider a gentleman's establishment, however small, complete without one. In my estimation a well-designed pinetum stocked with a good collection of coniferous plants, is not excelled by any other branch of landscape gardening.

The pinetum at Basing Park is very prettily laid out, and divided into sections, containing the different genera of Coniferæ, and being well filled the whole presents to the eye a miniature forest of Conifers. These are all planted on mounds of earth, with a flattened top to retain water. The benefit of planting the Pine and Fir tribe on such mounds is great, for the roots run near the surface, and unless the collar is elevated, a Conifer seldom thrives. They are planted in some rich soil, and for that reason do not require manure water, but occasionally a little fresh soil is put round the roots to keep them in good growing order.

Every other part of the establishment was in first-rate keeping, and reflected much credit on the ability of the industrious and intelligent head gardener, who, during the few years he has been at Basing Park, must have been very active in carrying out the various and extensive alterations for the improvement of the place.—G. N.

ROYAL HORTICULTURAL SOCIETY.

Dr. Masters. in his fourth lecture on Saturday last, took for his subject the Leaf and its modifications. After stating that leaves served the double purpose of the lungs and stomach in the animal economy, being at once the organs of respiration and digestion in the plant, he pointed out the distinctions between them and other parts of the plant, and then passed on to the consideration of their arrangement on the branches, which, he said, was a matter of more importance than their mere form. The various ways in which they are arranged on the stem and branches were then illustrated, and the object in all these cases, he stated, appeared to be the non-interference of the leaves with each other, so that, however crowded, no two should completely overlap each other, thus securing a due exposure of all to light and air. Sometimes the same end was attained by the lowest leaf in a spiral arrangement being the largest, so that the upper leaves do not altogether overlap it. The fact that leaves are often bent out of one another's way, as exemplified by the leaflets of the Rose, was then referred to as another instance of the manner in which the arrangement of parts is made subordinate to the perfect performance of the functions which leaves have to fulfil as organs of respiration, exhalation, and digestion. The different parts of the flower were then shown to be mere modifications of the stem and leaves—to be originally identical with these in form, structure, and mode of growth, and to be arranged on the same general principles; but however varied in appearance, the only two absolutely necessary were the stamen and pistil. Dr. Masters then announced that the parts of the flower would form the subject of his concluding lecture.

FLOWERS AND THEIR FITNESS.

We often find the value and beauty of flowers lessened and spoiled by the unfitness, with regard to times and circumstances, with which they are often thoughtlessly or ignorantly used.

Who has not seen at times strange flowers chosen for adverse seasons—some gay, laughing, flaunting Poppies put to the gravest, most solemn uses, or the sad ever-mourning Jasmine adorning the young heir's christening cake?

I know some will think this mere affectation of sentiment, and ignore altogether the indwelling spirit of flowers. Call them so much form, and substance, and colour, and scent, and nothing more, there is still a fitness or unfitness in the use of them. The Camellia, for instance—who can think of it without visions of festive mirth, of brilliant lights, of shadowy forms of beauty, of manly forms of strength, with the lines of care and of speculation and of deep thought smoothed away? The Camellia is surely the belle of all flowers during the long winter season, gracing our dinner parties, our balls, and concert-rooms; gleaming out in rosy crimson streaks from flaxen hair, or showing off its depths of spotless whiteness among the dark braids of brown or black. How it shines out in the dull gloomy weather, prized by those who possess it, envied by those who do not! yet who, with any depth of thought or kindly feeling, would ever take or send such to a sick friend—to one who in pain or weariness lay waiting for the soft summer months and the dear summer flowers?

That pure white Stephanotis with its dark green leaves, waxy petals, and delicate perfume, may live and bloom in the pastor's study in harmony with all surroundings—fit presence with holy thoughts and high aspirations—and perhaps by some gentle refining influence make stronger, more heart-reaching, the written words; or it may soothe the griefs which often in quiet lay heavy on the thoughtful spirit; but it is out of its fit place amid the noise, and talk, and jest, and laughter, and ringing of glasses in the clouded tainted atmosphere of the squire's smoke-room, though his guests be "lords and dukes, and parliament men of renown."

That large Dahlia, with its splendid blooms, perfect in form

and substance and adjustment of petals, and which seem in their solidity as they could never fade or fall away, is unfit for that nine-feet cottage garden. All through the summer months it thrusts down its thick roots into the soil, greedy as an Ash tree, and waves in triumph its long, blossomed arms to and fro, a very Samson in strength. And yet it stands alone; the Daisies that used to make a neat border on the side of the pathway have pined away for want of food, the Primroses with their soft green leaves are dried up; for the Dahlia can spare no moisture, but spreads out its large leaves far and wide, to gather up all it can of the summer shower or the refreshing dew. There is not enough left for even a weed to live upon. The Rose tree growing round the window never attempts to flower until it has reached the thatched roof. It is like that Upas tree, within whose deadly influence, fable tells us, nothing would grow—it is a beautiful giant in a desert country, from which even the pygmies have fled. The dwellers in that little cottage need no sun-blind, for the Dahlia stands outside their narrow-paned window all day long, keeping out sunshine and light, and casting long shadows on their evening meal. It is sadly unfit for its situation. And then, with what dignity it might have worn its honours in some princely domain! Looked at from a distance, and backed by dark evergreens and old trees, it would have shown off all its beauty—been indeed a splendid object. It somehow reminds one of the Yorkshire labourer going to see his dairymaid sweetheart, and who, wishing to make himself grand, chose a Pæony for his button-hole, thinking, doubtless, that size and weight were everything with flowers, as he thought they were with pigs and poultry.

Yes, those large-growing plants have no fitting place in a small garden, whether it be a cottage or villa garden; they gather to themselves more than is their own, and even then obtain not so much as they need. The proud Hollyhock, growing up like a tree, with its thick branches set all round with Rose-like flowers, growing on and blooming on until cut down by the frosts of winter, is, like its cousin the Dahlia, out of proportion in a narrow confined space, and need never be chosen for want of suitable plants of more than equal beauty.

Hyacinths and Jonquils, beautiful as they are, and largely as they are grown for the purpose, are yet not fitted in all cases for home decorations; they are well enough in halls, staircases, and windows—indeed, in any open airy place. When brought into the warm, enclosed atmosphere of a living-room they become to many physically unbearable, bringing on a high nervous excitement, and causing unrestrained tears to fall in showers; to the sick and the delicate they are overpowering beyond measure. Never are they so fine or so agreeable as when grown in a cool greenhouse, or out in the open air with the fresh young grass about them, and the spring breezes wafting their perfume to each passer-by.

Fashion, or long usage, has assigned the Orange blossom as the bride's peculiar flower; and if it were tried, perhaps, the rule of seeming fitness could not easily be broken through, for each maiden in her turn would hold forth eager longing hands for it on the eve of her wedding day, and, perhaps, think she was not safely and truly married if she wore it not. And yet it is not the fairest or the most bride-like of flowers. Our remote ancestors knew best why they fixed upon it—perhaps they had not a long list to choose from. It is not half so pleasing as the Almond, Pear, Apple, or Plum blossom; indeed, it has little beauty and less grace, for its stiff petals seem as though they were cut out of cardboard, and its stamens as if they had no purpose in the world but to fall away and make visible the embryo fruit. Point out the Orange blossom to any young lady with a cultivated taste for flowers, who does not know what it is like, never remembers to have seen it, and sure enough the exclamation will be, "Is that Orange blossom? Is that all? I wonder they should make such a fuss about it."

Then there are the Campanulas—real home flowers, well fitted for those gardens where the owners spend much of their time, where the master digs for himself, and smaller, softer fingers tie up the slender stems, and clip off the dying blooms, so that the little plants can never do what they are always trying to—form their seed-vessels; then they flower week after week, holding up such clear delicate cups to view, clear and delicate as Dresden china, and in which one would think the fairies delight to bathe when the rain is over. Yet these plants make no show in the large garden; rather the reverse, for they appear to be always in a going-away state; but they have great interest and beauty in a smaller one when carefully tended.

And, then, there is the Rose—fairest and sweetest of all flowers, whether it be the old Cabbage Rose, or the latest, newest, and best; which may be grown to a like perfection in the little cottage garden and in the rosery of acres; which is never out of place, never unfit, never unacceptable; which may adorn the shopkeeper's back parlour, or the merchant's palace; which the poorest little maiden and the royal princess may wear with equal good taste; which all may give and all accept, whatever their difference of rank, or fortune, or culture may be, and which is never more touching, or possessed with a deeper meaning, than when offered by the poor to the comparatively wealthy. Surely of all flowers it is the richest, the most beautiful, from its earliest stage of formation to the dropping down of the last petals. No wonder it is a favourite, for it adapts itself to changing circumstances, and offers its blooms and its perfume without stint or measure; and even in their dying state the flowers are said to possess a soothing, healing influence. In sheltered nooks, in hundreds of gardens, the pale pink Monthly Rose opens wide its blossoms almost before the snow has melted from the neighbouring hilltops; and when the winter sets in and the year is dying you find the bushes covered over with a multitude of buds, wanting only a little dry sunshine to make them burst out as if to adorn a very Indian summer.

I know of no other flower equally fitted for all times and circumstances. Some few there are even better suited for house plants, some which, when submitted to the influence of artificial light, brighten up or deepen their colour to a marvellous intensity, like the Primula; it seems to laugh again when placed in the full glow of a lamp. It is hard to believe it is the same little pink flower, so ready to droop beneath the sun's rays; but then the Primula will not grow out of doors in our cold, damp climate, and it is not very well adapted for a window plant. Its soft woolly leaves cannot be kept clean without injury. The constant syringing which keeps the Rose tree green, bright, and pleasant, would be death and destruction to the Primula.

And then there are some plants and flowers fitted only for their native place, the spot of their birth—whose very life appears to be made up of the chilly night winds as well as the hot sunshine. Bring in the wild Bluebell from the hillside, and how poor and miserable it becomes—how its beauty and freshness pale away before the glitter and strong lights of the drawing-room. Better far to leave it in its own wild home—on the breezy common, or the rough hilltop, or the edges of the corn fields, bending gracefully on its thread-like stalks, and bravely breasting the rain and storms of autumn. There it flourishes without help or care, a perpetual gladness. The wind sweeping over the bearded Barley waves to and fro its tiny bells, as if making gentle chimes; and the full-laden bees find in them cities of refuge to shelter in, until the dark clouds pass away and they can see their way home.—Maud.]

PEAR CULTURE.

(*Continued from page* 71.)

Fan-training.—A maiden tree should be headed or cut down to within 1 foot of the ground, and immediately above a bud, with two or more buds situated a little lower. This heading down should be performed in mild weather between the fall of the leaves and March, November being a good season. In spring one shoot is to be trained upright, and one to the right, and another to the left, to furnish side branches. All other shoots should be rubbed off closely. With the view of giving vigour to the side shoots, these should be trained at an angle of 45°.

In the autumn the upright and both the side shoots should be cut back to within a foot of the point from which the latter take their rise. Three shoots must be secured on the upright shoot or stem of the tree as in the preceding or first season, and they are to be trained in a similar manner; on each of the side branches two shoots are to be left, training them in at an angle of 45°. All other shoots are to be stopped at the third leaf, and to one afterwards throughout the season.

In the third season of pruning the leader should be headed back to 1 foot, and the two uppermost side branches or shoots must be cut back to 1 foot from the stem of the tree; but the lowest two are not to have their shoots shortened in this or the following season. In order to secure the disposition of the shoots at regular distances a semicircle should be drawn at 10 feet from the stem, taking the setting-on of the lowest two side branches as the centre; the distances between the shoots or branches are measured on the semicircular line,

the first at 1 foot from the ground, and allowing the same distance upwards between every line, and consequently branch. This will be easily understood on reference to *fig.* 7. The lowest of the first pair of side branches on both sides of the tree is to be trained horizontally, and the uppermost on the same main side branch is trained by a line stretched from the setting-on or origin of the shoot to that point on the semicircle next above the first branch, which is necessarily horizontal. The shoots, or laterals as they are termed, that were stopped, are at the winter pruning to be cut-in to within an inch of their base. The highest two side branches are to be trained, and the shoots (two each) which they produce, to those points on the semicircle proper to them. The same stopping of the laterals applies to this as to the preceding year.

In the fourth year the leading or upright shoot, and the highest two side branches are to be cut back to within 1 foot of their base, and the uppermost of the next lowest side-branch shoots is also to be cut back to 1 foot; but none of the other shoots must be cut, except the laterals, which are to be cut back to within an inch of their base. The heading back of the fourth side branch will give two shoots, and these are to be disposed as represented in *fig.* 7, which shows by the figures 1, 2, 3, 4, 5, 6, and 7 the several headings back of the upright and side shoots necessary for securing shoots to cover the wall. The figures correspond to years, the shoots being severally cut at the bar or line across them, and in the autumn of the year corresponding to the figure. The tree is represented as trained on a 12-feet wall. I have been led to this mode of fan-training from the fact that the ordinary directions for fan-training are vague, and in many cases limited to "training in a shoot so as to cover the wall regularly in every part." Now this advice may result in the wall being covered, but in a very imperfect manner, and many parts of the tree may be ill-furnished with shoots.

The mode shown in *fig.* 7 is systematical, and may be practised by the least initiated in garden matters. The chief objection which I have to fan-training, and I do not advocate it for the Pear, is that the upper parts of the branches grow more than the lower parts, and give a preponderance of wood, which, if it does not interfere with the productiveness of the tree, causes the fruit to be far too much shaded. To obviate this defect of fan-training, when the shoots or leaders of the branches reach the semicircle they are trained horizontally, as shown in *fig.* 8, and upon that part the finest fruit is produced.

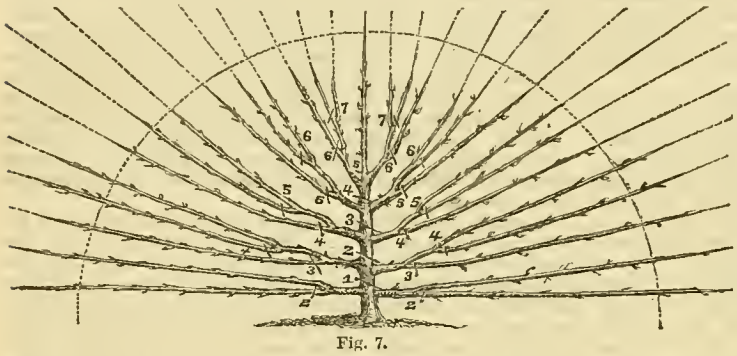


Fig. 7.

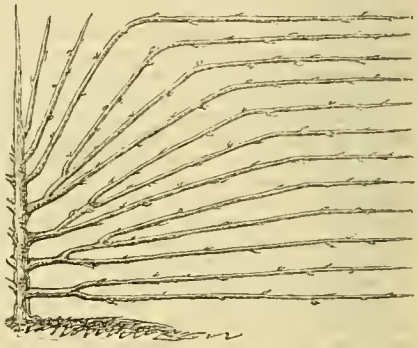


Fig. 8.

Upright-training.—The maiden tree should be headed to within a foot of the ground in the autumn. In spring the shoots from the uppermost buds should be examined, and the two most promising and situated nearest to each other should be selected for training, all others being rubbed off; then train those retained upright, but allowing a space of about 1 foot between them.

In the autumn of the first year's completion of growth the shoots, if each more than 3 feet long, as they will be, are to be depressed to a horizontal position, taking care not to break them, and let their points be turned up where the last upright shoots are wanted, and be cut off at two buds above the bend, as shown in *fig.* 9. When the buds break in spring the most promising nearest to the points at which the uprights are required, as well as one from each extremity, are to be retained, and these only, all others being rubbed off. Thus for furnishing six uprights three buds on each side of the stem should be left, the first 6 inches from the stem, and the next a foot from it, and so on, as shown in *fig.* 9, *a a*, *b b*, and *c c*. The result will be six shoots at 1 foot distance between each, as shown in *fig.* 10.

The uprights in subsequent seasons are not to be cut back at the winter pruning, but in summer, should one be disposed to outgrow the others, stop it when it has grown 13 inches, by doing which the sap will be diverted into the weaker shoots, and they will gain vigour. Shoots will result from the stop-

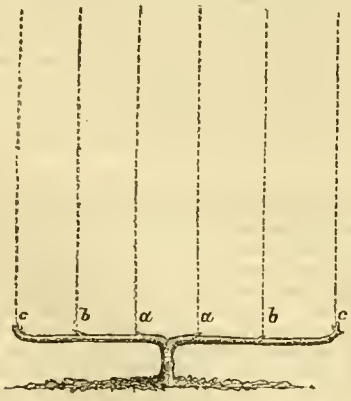


Fig. 9.

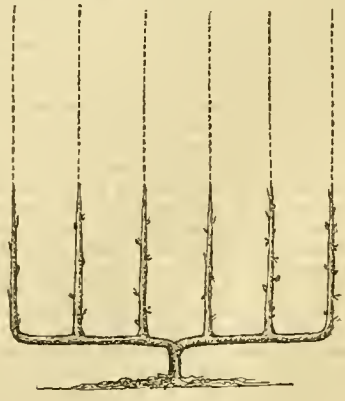


Fig. 10.

ping in the course of the same summer; the uppermost must be trained upright, and the others stopped at the third leaf. The laterals are to be stopped at the sixth leaf, and in autumn should be cut in to within an inch of their base.

If less than six upright branches are desired, the two shoots in the first autumn after their production may be cut back to 18 inches on each side of the stem for four uprights, two on each side of the stem. The distance between the uprights should be 1 foot.—G. Abbey.

(To be continued.)

NOTES AND GLEANINGS.

The subject of Tricolor Pelargoniums has lately occupied a considerable share of attention in our columns, and we are glad to find that the Royal Horticultural Society invite the raisers of these varieties to exhibit them at the Floral Committee Meeting on the 21st of May, communicating at the same time as much as may be known of their history and parentage. As an inducement, a silver medal is offered for the best collection, and it is hoped that the competition will not only prove of service by settling the comparative merit of varieties, but will also bring on a discussion, which may elicit interesting facts relative to their origin and the causes of their leaf-colouring.

—— We find that the "New Food," seed of which is offered by some seedsmen, and which Mr. Hullett surprised the world with through the pages of some of the daily papers under the name of Sorghum tartaricum, is the old Sorghum cernuum, a native of India, and much cultivated in Egypt and Algeria, but so tender that it ripens with difficulty in Italy, and not at all in France. The name of tartaricum was given to it by a seed house of Milan, for what purpose must be left to conjecture. It differs very much from the Sorghum saccharatum, the panicle of which is long, loose, spreading, and erect, while that of cernuum is short, dense, and capitate, and is always hanging downwards, or what botanists would call "nodding." Even for ornamental purposes it will never be of any service in England.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Amongst the numerous enemies with which the gardener has to contend, snails and slugs hold a most prominent position. The pressure of work in April and May is so great that the destruction of these depredators is apt to be neglected. Lime is well known to be destructive to them, but it is not always at hand in a quick state, and a shower of rain soon destroys its power. New sawdust and riddled cinder ashes, if applied in time, will likewise prevent their ravages. The ashes, riddled to the size of Radish seeds, all dust being excluded, and strewed over the young crop when just appearing above ground, I find efficient. An excellent chance is also thus afforded where occasion requires for a thorough mechanical division of guano as a top-dressing, so that the application will serve two purposes. A handful of good Peruvian guano, blended minutely with these ashes, would prove a ready mode of manuring a weak seed-bed. *Broccoli*, sow a portion of the late kinds. *Beet*, sow; also *Cardoons*, and the principal crops of *Salsafy* and *Scorzonera*. The seeds of the Beet should be steeped a day before sowing, especially if the soil is dry. *Celery*, prick-out about 4 inches apart, in an open situation, on beds formed of rotten dung and rich free loam laid on a hard surface. The growth of these plants should never suffer any check from drought. *Cucumbers*, prepare ridges for pickling sorts; these are best sown where they are intended to produce, and hand-lights, not now required for Cauliflowers, can be placed over the patches, although some even dispense with such protection. In case of accident, some, however, should be sown in pots, but not forced. *Camomile*, transplant. Sow a bed or two of *Herbs*, such as Pot Marjoram, Winter Savory, and Thyme, for next year's planting; this should be done every second year in all gardens, as the old plants are liable to wear out. *Parsley*, secure plenty in highly manured beds at the nearest end of the kitchen garden. Examine and remove the herb plantations. *Peas*, sow successions, also of *Broad Beans*, and amongst the former Knight's Tall Marrow should form a principal part; also plant-out *Kidney Beans* forwarded in pots or boxes, and sow for succession. *Rhubarb*, break off the flower-stems as they appear, unless a few be required to run up for seed. Thin plants in seed-beds, for if crowded in a young state their future success is endangered.

FRUIT GARDEN.

The operation of disbudding Peach and Nectarine trees should be proceeded with, more or less, according to the development of vegetation, and this will now be rapid. Owing to the advanced period of the season constant attention will be necessary in order that the removal of shoots may be gradual. Should the green fly appear, moisten the trees, and then dust them over with snuff or powdered tobacco leaves. Strawberry plantations will require abundance of water if dry weather sets in, and a piece of ground should be prepared for the reception of plants as they are turned out from the forcing-house. Thin suckers of Raspberries, leaving four or five to each stool.

FLOWER GARDEN.

Continue to fork up borders slightly that were dug in the autumn, and to regulate any of the more advanced herbaceous plants, tying them up if they require it. Clematises, or such climbers, must be frequently looked over, and nailed or tied as they advance in growth, at the same time removing abortive wood if not wanted for another season. Hardy annuals coming up too thickly should be thinned out and transplanted if required. Sow annuals amongst rockwork, and plant out any rock plants which have been kept in pots during the winter. Plant out in borders Ferraria roots that have not been potted, and plant also in beds Gladiolus cardinalis, Ixias, Tritonia fenestrata, &c., sticking Laurel branches thickly amongst them, as a sort of protection, for a few days; if frosts should occur a few mats might be thrown over them. Auriculas are now blooming; the amateur may experiment in cross-fertilisation to obtain new varieties. In growing for exhibition the pips which are mis-shapen should be removed with sharp-pointed scissors, and care must be taken that the trusses of bloom are not exposed to the too powerful action of the sun. If the seed gathered last season has not been previously sown the present will be a good time for doing so. Sow in shallow pans or boxes in light vegetable soil; it is only requisite to press the seeds on the surface and cover lightly with fresh moss. They will, when placed in a cold frame, be up in a few days. Put the sticks to Carnations and Picotees as soon as possible; if delayed the roots will be injured by their insertion.

GREENHOUSE AND CONSERVATORY.

See that climbers and all plants of rambling habit have due attention in regard to stopping, water, &c. Camellias forced into wood should have a trifling check as soon as the young leaves have attained their full size; this is best accomplished by diminishing the supply of water at the root. Continue, however, to shade, and syringe morning and evening. As the mixed greenhouse is everybody's structure, many plants will be treated under this head which should more properly be ranged under the heads Stove or Common Greenhouse. In doing this it will be presumed that the house is kept somewhat warmer than a cool greenhouse, or one in which artificial heat is used only to exclude frost. By keeping one end of the house (the end where the hot-water pipes or smoke-flue enters), closer, and using more atmospheric moisture and a greater amount of air at the other end, the amateur may, with such a house, indulge in many of the luxuries of larger establishments. Repot and propagate Begonias. This is one of the most useful families of plants that can be grown. Keep up a cleanly style of cultivation by means of sweet soils and improved modes of potting, together with the most complete drainage. Make frequent use of weak and clear liquid manure during the growing season.

STOVE.

The increased temperature will render great vigilance necessary to keep down the scale and bug on all kinds of exotics in warm atmospheres. Nothing can be more unsightly, or betray greater negligence, than plants swarming with these insects in otherwise finely-kept stoves. The foliage which plants are now making is, in many instances, destined to be their chief ornament for months, and if this is destroyed in this early stage the plants will exhibit all the evidences of careless management. See that the growing Orchids have due attention in regard to shading and atmospheric moisture, the latter is still lamentably deficient in many structures, or, if of sufficient amount, of too fluctuating and capricious a character.

PITS AND FRAMES.

Such plants as are removed to cold pits should be left uncovered during mild nights, and air should be left on pits and frames when the plants are sufficiently strong for turning out. Recently-struck cuttings of Verbenas might be pricked into rich beds, protecting them with hoops and mats, in a month they would be fine plants for removing into the flower garden, taking care to preserve balls of earth to the roots. Calceolarias, Salvias, &c., might be treated in the same way. Pot off tender annuals, and keep them in a mild heat until they are well rooted. If the plants or cuttings are not quite clean before removing them to the pits or frames, give them a good fumigation before they are taken out. See that there is a sufficient stock of everything to plant the beds properly; if not,

put in some more cuttings without delay; the plants which they make do admirably to fill up gaps in the summer.—W. Keane.

DOINGS OF THE LAST WEEK.

Since writing last we have had the gales, hail, and sleet of February, and the bright sun and warm genial showers of June in this changeable April. The pastures and corn-fields seem brighter and greener every day; in the garden Peas and Beans are healthy and strong; the old stumps of Borecoles and Brussels Sprouts are breaking afresh; Sprouting Broccoli affords frequent cuttings, and the white kinds are coming in to help us on before the Cauliflowers are ready. Even *Parsley*, which out of doors was almost out of sight, is now making itself visible. We hardly know where we would have been for a supply, always twice and frequently three times a-day, during this long winter but for a row in the cold orchard-house, and even that became almost invisible, though supplied with warm water, and litter was placed along the sides of the row to keep the heat in and the cold out. Without such advantages, Parsley must have been scarce in many districts where it was not boxed in houses or planted in frames. In fact, we have heard of some districts where for miles a bit of Parsley could not be had. We once walked through a kitchen garden of six acres, and for six months a leaf of Parsley had not been seen. Other crops come and go in their season, and if at all short the season goes on and the trouble is over; but Parsley is an every-day requirement, and often for garnishing is wanted several times a-day. In late ground, this month is the best time for sowing Curled Parsley for general use, and the plain Hamburgh for the sake of its roots. In a rather long practice we have been asked for Parsley roots three times, and in two of these cases we took up the roots of the common best Curled, as we gave up growing what was so seldom asked for. A change of guests and a change of managers in the kitchen will often render great changes in the nature of the supplies necessary, and the gardener must act accordingly: therefore it is well to keep many plants in the background, though they may be very seldom asked for. We generally sow a little Parsley about the end of June for successional supply, and especially if it is to be protected a little, as in the front of an orchard-house, in winter.

Though in general so easily grown, yet there are things about the thriving of Parsley that are beyond our ken quite as much as the disease in Cucumbers. We have ourselves been unable, and we have known cases of the first gardeners in the country being unable, to obtain a crop of Parsley in the ground on which it was sown. Though coming up well enough, it would become yellow and sickly, and dwindle away out of sight. Change of ground is always of importance; but the changing and pulverising of ground, and its exposure to air, were attended in such cases with no beneficial effects. The plants that came up so well would ere long take their departure. Now the remedy in such unfavourable circumstances—the only one we have ever found successful—is raising the plants in the open ground, or in boxes, and then transplanting in rows, instead of sowing where the plants are to remain. In some soils, where it is next to impossible to secure a good healthy plantation of Parsley from sowing and allowing the seedlings to remain where sown, with any due amount of thinning, in the same ground the Parsley will thrive if young seedlings are transplanted; the ground, of course, being in good order and the planting being done nearly as carefully as planting Onions—that is, inserting the root, and not burying the collar of the plant. As to the reason why Parsley will thus thrive transplanted, and not thrive where sown, we have none to offer; and though we have not experienced the difficulty referred to for many years, still the fact may be useful to those who are astonished to see their young Parsley plants disappear in an unaccountable way.

Herbs.—The winter having injured and thinned these, we have been engaged in making fresh beds and patching up old ones. It is late enough, but it will yet do to put in slips of Sage, which cannot be done without; Hyssop, Rosemary, Lavender, Savory, Thyme, though to make sure of the latter it is always safest to sow a little in a pot every year, and then transplant. Young plants will stand a severe winter, when older plants will be killed or have their stems split. Plants of Wormwood, Horehound, &c., may also be divided, or slips of them and Rue inserted; and if the soil is heavy, as ours is, and on a north border, some road drift, or very sandy soil, should be put about the slips and plants. Balm, much relished by many, is best divided, and comes best when this operation is done often and the ground changed. Tarragon, so much used by some in salads, succeeds best divided, or, if scarce of it, as we generally are, the young shoots when 3 inches in length strike freely under a hand-light, and may then be planted out in rich lightish soil, and sufficiently elevated not to suffer from damp. Fennel generally looks after itself, and, until this winter, we have seldom known it to be injured, even by hares and rabbits. A month ago we could scarcely have obtained a leaf out of doors, the hearts of the plants were eaten down as far as they could be reached. Where much is wanted in winter for fish, it is advisable to have a few pots under protection. In the position of our border we find, that to be sure, we also require to make at least one fresh bed of Mint in the year, and the best time to do that is when the young shoots are 2 or 3 inches high, as they generally have a few small roots at the bottom below the soil. These shoots make better beds than the running underground stems. Did we want much Peppermint we would use it the same way, and in stiff ground elevate the beds and dress them moderately with rotten manure. We have had to use Peppermint instead of Spearmint for lamb and Peas several times, and nothing was said about the difference; but no doubt Spearmint is better, and much of it is wanted from this time to the end of the Pea season. Peppermint is valuable for its essential oil, and the Peppermint water, the result of distillation.

Sowed in the same border Carraway, Chervil, Parsley, &c. It is always advisable to have a little piece of almost everything wanted in the herb way in such a place, and that place should be, if possible, as near as may be to the kitchen. We have in kitchen-serving days often had to walk nearly half a mile to the kitchen, and as much back again, with a sprig of Thyme, Basil, or Marjoram. If near the mansion such journeys and waste of time would be much lessened. When very near, the advantage is apt to be presumed upon. It very often takes much less time to serve the kitchen when the garden is a good way off from the mansion, for then everything, even to a bit of herb, must be ordered at once to prevent unnecessary waste of labour. Basil, Sweet Marjoram, &c., except in warm southerly places, require to be sown under glass and then to be planted on a south border. When these are wanted green in winter they must be sown in July, potted off, and kept in a moderate hothouse all the winter. Winter Marjoram, Savory, &c., may be divided or increased by slips.

Keeping Dried Herbs.—With us gardeners in general, nothing is worse done. We cut them just before the bloom opens, hang them up, and let them look after themselves; or, if we dry them well, for want of time and conveniences, they are put away where they are exposed to air, dust, and every possible evil. To have good dried herbs, from Parsley to Mint, unless there are the suitable conveniences, all such drying should come under the control of the housekeeper, or the head of the kitchen. The best place to dry them in is a hot room or closet, where they receive no sun, and then when dried, they should be kept in close bottles, or, which we prefer, not too much dried, then pressed with a press and heavy weights into thin cakes, to be wrapped in paper, kept in a dry place, and but little exposed to air. Many of our home sweet herbs thus treated would be no bad rivals to the much-relished Tea leaves of China.

Winter Greens.—Took the opportunity of a dry morning, when the ground could be trodden and raked, to sow the main supply of Borecoles, Brussels Sprouts, Savoys, and Broccoli; beat the seeds in with the back of a spade gently, and then covered with some sandy soil, and netted all over. We have been trying an old plan for keeping birds away—that is, making the seeds red with red lead before sowing, and as yet we see nothing touched. We did not use this plan, being afraid that some favoured birds might be injured, but if birds do not touch such seeds at all, there can be no injury to them; and as yet we do not see one meddled with. If either the seed or the powdered red lead has been kept a short time in a damp place, a very little lead will powder or crust the seeds. Even netting costs time and labour, and in most gardens the saving of work instead of making it must be the rule.

Globe Artichokes.—Ours, with less protection than usual, have stood the winter well, thanks to the snow, or we would have given more. This is a good time to make a fresh plantation, and where they are prized as early and as late as possible, the taking strong side pieces from the stools, and planting them in well-stirred, well-manured ground, in rows 3 feet apart and 2 feet in the row, will afford produce late in

autumn when the older plantations will be about over. These are kept longer in free bearing by having rich mulchings and manure waterings in summer.

Sea-kale.—We have gathered freely from under the common garden pots, placed over the crowns out of doors. We lately stated that as these pots were to have no covering, a quantity of rough hay and dry straw litter was placed round the sides of the pot inside, leaving a hollow in the centre. Without such precaution pots exposed are often injurious to plants inside of them in sudden and severe spring frosts. We have before now had Sea-kale not only retarded, but injured when thus covered, when it did not suffer in the least when fully exposed. In the last sharp frost Endive plants covered over with pots for blanching and fully exposed were much injured, whilst the plants that had nothing on them did not materially suffer. Thus, owing to the porousness of pots, and the free radiation of heat from them, we have uniformly advised that the pots containing even hardy plants should be protected in winter and spring.

Though we have a good piece of Sea-kale, we have taken up for forcing more than half of the plants available for cutting, and of what is left we would like to confine the one-half to spring cutting out of doors, and leave the other half uncut, so as to be taken up first next winter, as from not being cut the buds will be all the sooner matured. The ground cleared has been fresh dunged, ridged, and sandy soil and burnt clay added, and will be planted again, though not in accordance with rotation of cropping, with young plants sown about this time last year and now showing themselves. The old forced plants will also be replanted, but a few of them will be the worse for wear. For this lifting and forcing plan we find no system better than planting in rows 2 feet apart, and from 6 to 8 inches asunder in the row. This gives plenty of room for forming strong plants and prominent large buds or crowns. We may here advert to a statement of "Unsuccessful" who says he can only have his Sea-kale without forcing by covering in the open air, and he never can obtain it white and tender enough to please himself or his friends. We think he must err in covering with his pots, boxes, or whatever he uses, too late. If the plants shoot 2 or 3 inches, and have their purple colour at the points before covering them up, they take a long time to become well blanched; in fact, they will often be too long and leggy before the points lose their purple colour. The remedy is to cover as soon as the plants peep through the soil. When covering with pots or wooden boxes out of doors is resorted to, it is best to plant out in threes instead of in rows. When the plants are to be forced where grown and without pots, then the best plan is to place a mound of ashes over the crowns, a few twigs round, and cover with tree leaves, &c.

"Inquirer" wants to know "if he cannot have Sea-kale in April and May, without pots of any kind, as they are always being broken in moving, cracked with frost," &c. Undoubtedly he may, and by many modes. We just now cannot lay our hands on so many pots as we would like, and wishing also to be independent of litter for out-door gathering, we shall, if we can find time, adopt the following plan:—We shall line-off some small beds, 3 feet wide, with two-feet trenches between them, take out the trenches some 15 inches deep, and lay the earth on the beds, keeping up the sides with some rough slabs and posts. On these beds we would plant two rows of good plants 6 inches apart in the row, and attend to them during the summer. When convenient we would fill the trenches with sifted coal ashes, and then, in the end of autumn, clear the beds of decaying foliage, &c., and cover them over with fully a foot of the ashes. Then in April and onwards when we saw little mounds appearing on the ashes, we could examine and cut the Sea-kale. When "Inquirer" had gathered all he wished, he should put back the ashes into the trench for a future occasion, and dress, manure, and attend to the plants in summer. If he filled the trenches with hot fermenting matter in the middle or end of March, he would gather all the earlier. Could we easily obtain bog or peat earth fine, we would prefer that much to ashes. We have never seen whiter and sweeter Sea-kale than that which was blanched by a covering of bog earth, and the same earth had lasted many years, being placed in a heap when the crop was gathered. We would here add, Have nothing to do with sawdust, whether fresh or otherwise, for this blanching purpose. It is almost sure to flavour the crop.

Cucumbers bearing only too freely from having a little very old cowdung in the compost, showed in that compost some signs of spawn running, and therefore gave a good watering with clear lime water of the right temperature. The stacked soil we use for general purposes has to be examined as carefully for spawn as for wireworms.

FRUIT GARDEN.

Planted out strong plants of Melons in a frame and heated pit. Could not find room for them earlier, but now will be able to harden and expose many subjects needing protection and heat previously. The chief work in this department has been watering under glass, and using drainings from the farm-yard when such could be procured. When that is not to be had, we use manure water from barrels, made with cowdung, soot, &c., clearing with a little lime. These barrels were old and rotten, full of holes, and of no use above ground except as firewood, but the worst holes patched, and the barrels then sunk in the ground to the rim, and banked firmly round with clay and tar at the sides, they have done good service for years, and may do for the same purpose for years more. Strawberries have the water varied. Plants, like men, prefer change of food.

ORNAMENTAL DEPARTMENT.

The out-door work has been much the same as in previous weeks, rolling, switching, and preparing for mowing, which ought to have been done, but we think we must roll again. We also turned over ground, planted Gladiolus, and took off cuttings of Hollyhocks. In-doors much potting has been done; bedding plants were moved, cuttings made, and temporary beds made for forwarding tender plants, besides pricking these out, hardening off, &c. We find that we can only allude particularly to two subjects.

1, *Making Slight Hotbeds.*—When we have nothing but the long litter from the stables and a very small quantity of droppings to so much straw, we like in general to throw such material together, well watered, for a week or ten days, and then use it for a bed, with 3 inches or so of tree leaves on the surface; but to save labour we often dispense with all preparation whatever, bring the littery dung from the stables, mix the droppings regularly through it, tread it regularly, which is like going into a fresh haystack, and then dash some water all over it, for there would be little or no heat without. The treading and the watering will bring a bed of such loose material seemingly 18 inches high down to less than 1 foot. We then add about 3 inches of leaves or half-rotten dung, tread firm, put on a surfacing of dry coal ashes, and there is a place for setting anything on in pots that requires a nice heat. Of course, if pricking out is the matter in hand, some light well-aired soil is used instead of the ashes. A little practice in the making of such a bed will insure a lasting mild heat, and the covering referred to guards against everything in the way of deleterious steam. This is a good plan for many purposes, when you cannot afford to work and decompose your little dung much before using it. Bulk, if not of the best, must often be made the most of.

2, *Watering* small seeds and seedlings sown thickly in pots and pans. We have often entered into details as to preparing seed pots and sowing; and now the seedlings are up as thick as grass, and there is no chance of pricking out as yet, for that takes up so much more room. Well, they must be watered, thick as they are, and "Anxious" says he watered carefully with a fine rose overhead, and next day a vast number of his plants—nay, whole pots were fogged off—gone just at the surface soil. How? Well, we cannot exactly tell why; we only believe the fact, and will merely mention the preventives. First, never water such tender seedlings overhead when very close together, but take a small pot with a spout, and from that pour water on a potsherd or oyster-shell at the side of the pot, so as to sail or flood the little plants with water without pouring it over them. Secondly, as soon as convenient take up the little young plants, not separately, but in patches, and prick out into other pots. You can thin afterwards when larger. In either case there will be but little dying off.—R. F.

TRADE CATALOGUE RECEIVED.

Ambroise Verschaffelt, 50, Rue du Chanme, Ghent, Belgium. —*Prix-Courant pour le Printemps et Eté*, 1867.

COVENT GARDEN MARKET.—April 24.

The supplies are heavy and the markets very dull, quantities of goods remaining on hand. Continental supplies are also in excess of the demand. Dessert Pears are now over, and but few Apples of good

quality are to be had. Hothouse Grapes and Strawberries are coming in in large quantities for the season. The best Potatoes are 10s. per ton dearer.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes ..... each	0 6	to 0 8	Leeks ..... bunch	0 3	to 0 4
Asparagus .... bundle	4 0	7 0	Lettuce ..... per doz.	1 0	2 0
Beans, Kidney, per 100	1 0	2 0	Mushrooms .... pottle	1 6	2 0
ScarletRun. ½ sieve	0 0	0 0	Mustd.& Cress, punnet	0 2	0 0
Beet, Red..... doz.	2 0	3 0	Onions.... per bushel	4 0	5 0
Broccoli ..... bundle	2 0	3 0	Parsley.....per sieve	3 0	4 0
Brus. Sprouts ½ sieve	0 0	0 0	Parsnips ..... doz.	0 9	1 3
Cabbage ..... doz.	1 0	1 6	Peas..... per quart	5 0	7 0
Capsicums..... 100	0 0	0 0	Potatoes ..... bushel	4 0	6 0
Carrots..... bunch	0 6	0 8	Kidney ..... do.	5 0	6 0
Cauliflower ..... doz.	4 0	8 0	Radishes doz. bunches	0 9	1 6
Celery ..... bundle	1 0	2 0	Rhubarb ..... bundle	0 4	0 8
Cucumbers..... each	0 6	1 4	Savoys ..... doz.	3 0	4 0
pickling .... doz.	0 0	0 0	Sea-kale ..... basket	1 0	2 0
Endive ..... doz.	2 0	0 0	Shallots ..... lb.	0 8	0 0
Fennel ..... bunch	0 3	0 0	Spinach ..... bushel	2 0	3 0
Garlic ..... lb.	0 3	1 0	Tomatoes.... per doz.	4 0	0 0
Herbs ..... bunch	0 3	0 0	Turnips ..... bunch	0 6	0 0
Horseradish .. bundle	2 6	4 0	Vegetable Marrows dz.	0 0	0 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .....½ sieve	2 0	to 3 0	Melons..... each	0 0	to 0 0
Apricots ..... doz	0 0	0 0	Nectarines ..... doz.	0 0	0 0
Cherries ..... box	5 0	0 0	Oranges 100	5 0	10 0
Chestnuts ..... bush.	0 0	0 0	Peaches..... doz.	0 0	0 0
Currants..... ½ sieve	0 0	0 0	Pears (dessert) .. doz.	0 0	0 0
Black ..... do.	0 0	0 0	kitchen..... doz.	2 0	4 0
Figs ..... doz.	0 0	0 0	Pine Apples ..... lb.	5 0	8 0
Filberts.....lb.	0 0	0 0	Plums ..... ½ sieve	0 0	0 0
Cobs..... lb.	0 9	1 6	Quinces ..... doz.	0 0	0 0
Gooseberries .. quart	0 0	0 0	Raspberries.....lb.	0 0	0 0
Grapes, Hothouse..lb.	6 0	10 0	Strawberries..... oz.	0 6	1 0
Lemons 100	5 0	10 0	Walnuts..... bush.	10 0	20 0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

Books (*Cobham*).—There is no such book at present. We shall publish one next year. (*A Constant Reader*).—We have a book full of plans now printing.

Seedlings (*F. H.*).—The Coleus seedlings are rich in colour, but cannot be judged of from a single leaf any more than can a seedling Verbena or a seedling Pelargonium from a single pip.

Soda for Manure (*Martyn*).—Your discoloured washing soda may be applied to the ground intended to be planted with Potatoes, or sprinkled between the rows of Cabbages, between Sea-kale plants, or on Asparagus-beds. One pound to 30 square yards will be sufficient.

Drunkenness.—"My gardener, I begin to fear, is a 'neer-do-weel.' He has a wife and three fine children, and is a most trustworthy, strong, active, clever young man, who thoroughly understands his business, and whom every one in the village respects when he is himself; but he is easily led away by his own 'chums.' I am never sure of him, and he frequently gets thoroughly drunk. I have a good garden, about 40 yards long by 20, with a most excellent modern greenhouse, and was seriously thinking of engaging him for my permanent and first gardener; but this is only his second week, and he has been off two clear days already. Would you recommend me to try him again?—J. P."

[It is too serious a responsibility for us to accept, and we cannot say Discard him, for if you do, and give his true character, no one will engage him; but we have small hope that you will be able to keep him. If a man, who knows that drunkenness ends invariably in ruined health, impoverished family, and the contempt of every one whose good opinion is desirable—if a man, notwithstanding, runs even the risk of drunkenness, it is such a proof of self-indulgence being preferred to all other considerations, that we never expect him to stop until he dies of delirium tremens and his family are beggared.—Eds.]

Town Flower Garden Planting (*Constant Reader, Cork*).—We have no doubt that the plan you propose will answer very well; and we hardly know how to advise you as to improving it unless we knew which part you wished to continue longest in bloom. The main part, which consists of two semicircular beds, making an oval, with the space between, and four beds round the oval, with straight lines on the outside, we would recommend to be planted with those plants that will stand for the season, instead of, as now, being partly filled with Calceolarias; and other beds with mixed Candytufts, which will only be a few weeks at their best. Thus, suppose you planted your two pointed semicircles (but which, by filling up the middle pathway, we would change into an oval), with bright scarlet Pelargoniums in the centre, yellow Calceolarias round, and a band of blue Lobelia outside; then of your other four clumps we would pair them on the cross, say two beds of Cerise Unique with Heliotrope for an edging, and two beds of Bijou Pelargonium with variegated Alyssum for an edging; or the Verbenas you have, if you like them better, might be round Bijou, with a string of Cerastium next the pathway. The five beds then would stand the season; and you might edge all your little square beds at the sides with the different Cerastiums, and in them plant the Candytufts, Astera, Saponarias, &c.; and if a bed went off, you could either replenish it, or, if a little seedy, it would not mar the general effect, which your mixed Candytufts, Asters, &c., dying off in the six central clumps would certainly do.

Planting Vine Borders (*G. I. B.*).—The chief injury done to Vine borders by planting them with flowers is, that the sun has little or no direct access to the border. We always advise not to plant them; but many in this respect go against their convictions. A skirting of Mignonette, &c., in front does little harm.

Pear Leaves Eaten by Caterpillars (*W. F.*).—Dust the leaves thoroughly with white hellebore powder.

Treatment of Czar Violet after Flowering (*J. H. H.*).—Presuming it to be in a pot in a cool house or frame, remove the plant after flowering to a shady border, and plant it out in a compost of rich turfy loam with a little leaf mould. If the plant is large and capable of increase, the runners may be slipped off, placed in small pots filled with a compost of sandy loam and a little mould, and set in a cold frame. Keep the plants rather close and shaded until they are established, then remove them to a shady but open situation, and plunge the pots to the rims. When the pots are full of roots shift into larger pots—say 4½ inches in diameter, using the same compost as before, and in July shift into six-inch pots, using a compost of turfy loam two-thirds, and one-third leaf mould, with a free admixture of sharp sand. The plants should be well watered overhead and at the root, especially during dry weather, and this treatment should be continued throughout the summer, avoiding anything approaching to a saturated or sour soil, of which they are very impatient. They may remain out of doors, the pots being plunged to the rim in coal ashes in a sheltered situation, or, better, in a cold pit or frame, protection being afforded from severe frost. You may turn out the plants as already mentioned in a sheltered, shady situation, previously dividing them and planting the divisions 6 inches apart every way, and keeping them shaded until established. They ought to be kept moist and be frequently watered overhead. Towards the end of September you may take the plants up with balls of earth, and place them in well-drained six-inch pots, or any size large enough to hold them well. Place them in a frame, and remove them as required to an airy shelf in the greenhouse.

Riddell's Slow-combustion Boiler (*Idem*).—It is efficient, and as economical as any boiler of its kind.

Cinerarias Flagging (*E. Y.*).—We think the flagging of the plants is caused by the compost being much too rich, and the roots being injured, the plants would flag under bright sun. We would advise your employing in future a compost of turfy loam from rotten turves two-thirds, and one-third leaf mould, adding one-sixth sharp sand, but no manure. We think if you use this rough, provide good drainage, and afford a light and airy situation, you will be more successful in future.

Vinery Aspect (*J. H. H.*).—The south side of your wall will do very well for a vinery, and the same aspect will answer for oblique cordon-trained Peaches under glass. The other side will do for Pears, but not for a vinery or Peach wall. The hardier kinds of Pears only should be planted against it. It would also do admirably for Morello Cherries. The south-east side would also grow Plums and Cherries.

Hardy Basket Plants (*Isa*).—There are few plants that are hardy in hanging baskets; they should have protection in winter, as their roots perish on exposure to severe frost. Polygonum complexum, P. vaccinifolium, Antirrhinum linariæfolium, Saxifraga japonica, S. sarmentosa, Sedum Sieboldi and its variegated form; Linaria cymbalaria, its variety alba, and the variegated form; Lysimachia nummularia, Lotus corniculatus flore pleno, Campanula garganica, C. Barlerii, C. muralis, Convolvulus mauritanicus, C. tenuissimus, Mikania scandens, Disandra prostrata, variegated Vinca elegantissima, and the gold and silver variegated-leaved Ivies.

Evergreen Oak Injured by Frost (*R. Capper*).—All you can do is to cut off the head of the tree immediately above the living part, and train any well-situated shoot as leader.

Correa Potting (*W. A. O.*).—Now is a good time to pot it, draining the pot well, and using a compost of two-thirds turfy sandy peat, and one-third sandy loam, with a free admixture of silver sand. It is well not to give large shifts; a pot 1½ to 2 inches larger than that in which it is potted is sufficiently large.

Daphne indica Potting (*Idem*).—The present is a good time to repot this plant, but it flowers more freely when the roots are confined.

Fertilising Aucuba Flowers (*Idem*).—If a flowering plant of the variegated kind were placed beside a male plant it would in all probability have the flowers impregnated; but, to make sure, the pollen of the male should be applied with a camel-hair pencil to the stigma of the female. The pollen will keep a long time—if kept dry for many weeks, but we do not think it will continue good until the following year. The flowers should be fully open when the pollen is applied.

Lapageria rosea Propagation (*Idem*).—It is raised from seed and propagated by suckers, layers, and cuttings of the half-ripened wood.

Bougainvillæa glabra (*A Subscriber*).—The Bougainvillæa is not easily flowered in this country, there being a majority of non-flowering plants compared with the flowering. The books are right.

Stanhopea oculata, Cattleya citrina, and Odontoglossum grande Culture (*Orchid*).—We fear you have not accommodation for the growth of these plants. The Stanhopea and Cattleya will not thrive in a greenhouse, nor will the Odontoglossum if the house is as airy as greenhouses generally are and should be. They will do very well if you convert your greenhouse into a close house, and keep it warm during the period the plants are making and perfecting their growth, and in winter they will do well in the temperature of a greenhouse if the atmosphere is dry. Keep the air of the house moist and the plants moist at the root—whether they are in baskets, on blocks of wood, or in pots, the compost should be moist—syringing them twice a-day or oftener, and the atmosphere should be kept moist by frequently sprinkling the floors, walls, &c. This treatment should be continued from the commencement of growth until it is perfected; then reduce the amount of moisture, and keep dry in winter. Do not overwater at first, but increase moisture with the increase of growth, and leave it off gradually.

Climber for the Back Wall of a Greenhouse (*M. H. R.*).—We do not know of anything that would thrive so well as, and look better than the gold and silver variegated Ivies, or you may have the variegated variety of Cobæa scandens; but the Ivies would look much better, associated as they would be with rockwork. The small-leaved kinds only should be planted.

Insects in Hotbed (*L. O. P.*).—The insects you sent are common mites or Acari, feeding on decayed vegetable matter, and not on living plants.

Cucumbers and Mushrooms (*Idem*).—You may have the Cucumbers as you propose, making for them a bed of horse-droppings or litter. The Cucumbers should be planted when your frame is at liberty owing to the bedding plants being cleared out, and you may in August wrap pieces of Mushroom spawn in a little dry hay and insert them 6 or 9 inches apart over the bed, and 3 inches beneath the surface; but you must not water the bed very much after the spawn is inserted, or it will perish. You may look for Mushrooms in about six weeks. We have, before soiling the bed for Cucumbers and Melons, placed pieces of Mushroom spawn, about the size of a hen's egg, 6 inches or so apart all over the surface upon the dung, having previously placed a thin layer of chopped straw over the bed, and after putting on the spawn covered it with a thin layer of the straw, and then with soil. This has been chiefly done in the case of beds for late Melons, and we have had splendid crops of Mushrooms in autumn and up to Christmas from the beds after the Melon plants were removed, the lights being protected from frost by mats and straw.

Gardeners' Royal Benevolent Institution (*Albert*).—Any person upon payment of £1 1*s*., annual subscription, may become a member; it is not limited to any age; under gardeners are of course eligible. For particulars write to Mr. Cutler, the Secretary, 14, Tavistock Row, Covent Garden, London, W.C.

Zamia elliptica Culture (*Idem*).—The plant should now be potted, using a compost of turfy loam, sandy fibry peat, and leaf mould, in equal parts, with a free admixture of sand. Provide good drainage, and place it in a temperature of from 60° to 65° at night, and from 75° or 80° by day, with sun and air, preserving a moist atmosphere to encourage growth. Syringe the plant overhead morning and evening, and when growth commences water copiously until it is perfected, then reduce the amount, still keeping the soil moist, but not nearly so much so as when growing. Afford a light and moderately airy situation. In other respects its treatment is not different from that of ordinary stove plants.

Making Asparagus-beds (*L. T. B.*).—In "Doings of the Last Week," page 282, you will find remarks to suit your case. Taking out a trench and filling with prunings and other rubbish, so as to secure good drainage, is a matter of importance, as in such stiff soils as yours, dampness at the roots is a great enemy to the Asparagus. If you cannot well do this we would trench the ground as deeply as the good soil goes, and pick up the subsoil and leave it. We would make narrow beds, by putting a few inches of the soil from the alleys on the bed. We would give no manure when trenching, but when the beds were set off we would place about 6 inches of rotten manure on the surface of each, and fork it in some 8 inches deep, incorporating it with the soil. We would plant young plants in the end of April, if 2 or 3 inches high, and give surface dressings of dung in summer, with dressings of burnt clay if we could obtain no sandy soil. Our advice is given on the principle, that in your case the plants will do best if the roots do not go far from the surface, and the deep stirring of the ground previously will prevent stagnant moisture. Even when a trench is made, we would keep all the dung, leaf mould, light soil, and burnt clay near the surface, say not deeper than 15 inches. We believe that by thus manuring the surface Asparagus can be grown in the stiffest soils. For simplicity nothing is better than single rows planted on the raised-ridge plan.

Succulent Vegetable (*X. X.*).—We do not remember your description given years since. If the vegetable is identical with Bruce's it would not grow in the open air hereabouts.

Vines Ripening their Wood Prematurely (*Constant Subscriber*).—We have read over your statement carefully, and as the Vines are 3 feet from the heating pipes, we do not think the pipes have anything to do with the Vines ripening their wood before the fruit is well set. As the Vines always come strong enough, break well, show well, and go on well until the wood ripens prematurely, we do not think that the border as to its constituents can be so much in fault, though certainly it would be advisable to have a drain 4 feet deep in front, and this we would make before attempting to lift the Vines and replant them. We think the premature ripening is more likely to be the result of a check to growth, either from too low a temperature or too much dryness in the border, especially in the four-feet inside the house. We would recommend, therefore, quite as many laterals being left. We think from 55° to 60° too low a temperature for an early house—say from 60° to 65° or 70°, and plenty of moisture at the roots about the time this ripening of wood generally takes place. Keep the outside border protected.

Circulation of Water in Quadrangular Pipes (*L. T.*).—You will have quite as good a circulation from your quadrangular pipes placed flat-wise, and more heat will be given off by them when so placed, as you will have so much more of an upper surface, and that will always be the warmest. We have some of the quadrangular pipes placed upright [] instead of as you propose flat ▭, and we found that from the quantity of water they held they were longer heating, and that when pretty hot at the top the bottom would be almost cool. We could not do as you (wisely we think), propose, place the pipes flat, but we did the best we could under the circumstances—namely, filled the pipes merely about half full of water, and then we had heat sooner, and the water heated the pipes above them. Place them flat by all means.

Bedding Pelargoniums (*Zonate*).—There are numbers of the ninety Pelargoniums named with which we have have had no experience as bedders, and several more which we do not even know. The following we can testify make good bedders:—Amy Hogg, Alice, Baron Ricasoli, Black Dwarf, Countess of Bective, Cyhister, Criterion, Clipper, Dr. Lindley, Diadem, Eleanor, Eugénie Mézard, François Desbois, Gem of Roses, Glow-worm, Helen Lindsay, Hardy Gaspard, Harry Hieover, John Veitch, Jeanne D'Arc, Indian Yellow, Lady of Loretto, Lord Palmerston, Lady Rokeby, Monitor, Mrs. Whitty, Madame Vaucher, Monitor, Milford Nosegay, Mrs. Wm. Paul, Napoleon, Orange Nosegay, Pink Pearl, Princess of Wales, Prince of Orange, Rosamond, Rival Nosegay, Rival Stella, Rubrocinctum, Stella, Spitfire, and Woodwardiana.

Seedsmen—Florists (*J. N. D., and an Old Subscriber*).—We cannot recommend any firm in particular. You must consult our advertising columns; write to several who there advertise, and ask for prices, &c.

Grapes Rusted (*J. Acton*).—The Grapes are affected with rust. Its cause is much disputed. We believe that it arises from the berries being subjected suddenly to a current of cold air after being overheated.

Names of Plants (*H. O. J.*).—1, Thyrsacanthus rutilans; 2, Vinca rosea. (*A Subscriber*).—No. 1 is Alonsoa incisifolia; all the others were insufficient for determination. (*Master John*).—1, Omphalodes verna; 2, Cornus mas; 3, Lotus; 4, Desmodium Skinneri, var. albo-lineatum; 5, Adiantum hispidulum; 6, Leucojum vernum. (*G. F. R.*).—The specimen is very much crushed, but we think it is Forsythia viridissima.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 23rd.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 17	29.901	29.762	62	37	50	47	N.W.	.01	Hazy and drizzly; exceedingly fine throughout.
Thure. 18	29.878	29.672	64	47	51	47	S.	.00	Very fine; densely clouded; overcast at night.
Fri. .. 19	29.586	29.460	65	50	52	49	S.W.	.01	Very fine; overcast; rain at night.
Sat. .. 20	29.331	29.015	59	37	54	49	S.	.32	Cloudy and rather boisterous; densely overcast, boisterous with
Sun... 21	29.456	29.305	54	37	53	49	S.W.	.01	Boisterous; very stormy; fine at night. [rain.
Mon... 22	29.590	29.714	61	42	52	49	S.W.	.05	Clear; clear and windy; overcast; rain at night.
Tues.. 23	29.735	29.712	64	44	52	49	S.W.	.12	Very fine; dense clouds and showers; fine at night.
Mean	29.639	29.520	61.28	42.00	52.00	48.43	..	0.52	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

HOUDAN FOWLS.

We have been requested to publish that which we know of this breed. We have kept them many years; they are very hardy, more so than the La Flèche and Crêve Cœurs, they bear close confinement without injury to their usefulness, and they are excellent layers. We believe they do quite as well here as in France. They are not kept so easily in bounds as a Cochin. We should not feel safe with less than a five-feet fence to confine them. Their disadvantage is, they do not sit, but in any country where eggs only are required we think most highly of them. They are never sick, they are much heavier than they appear to be, have grey square bodies, broad across the back, and are short-legged, five-clawed. Mr. Jacques thus describes the cock:—

"Roundish body, strongly built, of ordinary size, near the ground, resting solidly on strong feet; large head, half top-knot, bearded and whiskered, triple transversal comb; five toes on each foot. Plumage in the adult, speckled or splashed, black, white, and straw colour; in chickens, black and white only. No red feathers are admissible." Our very intelligent author proceeds to "general considerations on the breed." We quote literally:—

"This is one of the finest breeds of fowls, and nothing is richer than the aspect of a poultry yard composed of Houdans; but their good qualities are far beyond their beauty. Besides the small weight of bone, the quantity and delicacy of its flesh, it is admirably fecund and precocious. The cock chickens attain a large growth in four months, and easily, with ordinary care, put on fat and attain a large size.

"The pullets make magnificent poulardes, and among all breeds, this it is that shows the least difference in weight between the cock and pullet. They lay abundantly at an early age: the eggs are large and remarkably white. Pullets begin laying in January.

"This is truly a rustic breed, and is more easily reared than any other indigenous breed: it wanders less and pilfers less than most others. Like all large layers, this is but a very moderate sitter, yet the hen sits tolerably and is a good mother."

THE POULTRY CLUB.

Having been applied to for my subscription to the Poultry Club, before paying it I should certainly like to know what prospect there is of obtaining some return for my money. Hitherto it has been a very one-sided affair. The Club may have done good, which I am not aware of; the only benefit that I have derived from several years' subscription has been "The Standard," value 5*s.*: therefore, before continuing my subscription, I should like to know for what it is wanted, and what benefits are derivable from being a member henceforward of the Poultry Club? Perhaps some one may see fit to enlighten my darkness.—Bella.

FOOD FOR CHICKENS.

In last week's number of the Journal I noticed a communication from a "Weekly Subscriber" complaining of inattention on my part in forwarding the receipt for chicken food as per advertisement. I can only say that I have not in one single instance omitted forwarding either the receipt or the condiment as soon as it was possible; but we have a mail only three or four times a-week, per steamer, and if the weather be boisterous it is sometimes detained for as many days, thus causing a delay which may perhaps have been unaccountable and annoying to some of my numerous correspondents.

With respect to a "Weekly Subscriber," if his was an application dated the 23rd of March, and headed Kingstown, Ireland, having exhausted my stock of receipts, I was having a fresh supply printed, and was thereby delayed a couple of days. I forwarded one in due course, and the following day received another letter from my Irish correspondent complaining that he had not received the receipt, and demanding either it or the stamps. Having sent the receipt the previous day I did not think it necessary to answer this letter: hence, I suppose, the communication to your Journal.

If a "Weekly Subscriber" will send me a directed envelope, I shall be most happy to forward the receipt, and I will also send him a packet of chicken condiment by way of compensation for trouble and expense.—A. Le Cheminant.

BREEDING DARK BRAHMA POOTRAS.

I have read much in the Journal of late in reference to breeding Dark Brahma Pootras. I fear if we endeavour to come to the standard of the correspondents, we shall so mix and deteriorate this really good and handsome breed of fowls that in a few years we shall be unable to recognise our favourites in the wretched mongrels to which we shall have reduced them.

"Nemo" will have it, there are two schools of Brahma breeders and exhibitors, and he has been pleased to attach my name to one of these so-called schools, and hinted pretty broadly that I lean to the brown shade of colour in the hens rather than the silver-grey. This, I will grant; I will therefore try to give my reasons for the preference. When the chick of the Brahma first makes its appearance from the shell, what colour is the down on its tiny back? Is it not brown? I care not whether it is bred from birds professedly of the bluish-grey or not; this down gradually gives place to feathers, which in ground shade are of a dull whitish colour, minutely but distinctly pencilled throughout with dark pencilling. As they grow older, the pullets gradually develope themselves into the very shade (bluish-grey) which so many advocate; but wait awhile, watch those very pullets that possess that *true* shade, they moult again, and as hens their ground colour is brown, not a reddish brown, but a clear brown without the reddish tinge. This can but prove one thing—viz., that a brown ground shade is the correct and only colour. The red I abominate, and I maintain that it will never exist where due care is exercised in the selection of breeding stock.

Mr. Richard Teebay was the most successful breeder and exhibitor of Brahma Pootras in this country. I think he will bear me out in saying, there was no silver-grey about his hens; they were generally quite dark, but most beautifully and distinctly pencilled. This gentleman has told me himself that he likes to see a slight bronzing on the wing of the cock, as this helps to develope the desired shade of colour. The very gentleman whom "Nemo" professes to say belongs to the "silver-grey school," purchased the whole of Mr. Teebay's stock, and has exhibited hens quite as brown as any exhibited by me.

The gentlemen who desire to introduce this abortive silver-grey in Brahma hens will have many difficulties with which to contend. I will enumerate a few—viz., size, small; light breasts with muddled pencilling, or white breasts with no pencilling whatever; white heads, the pencilling only commencing half way down the neck hackle; bad combs; an insufficiency of fluff, and badly-feathered legs. They will also have to rear a large number of chickens in order to have a few comparatively good pullets, which will, in spite of every effort, moult to the natural colour, which they wish to avoid.

I have paid particular attention to Brahma Pootra fowls for the last fifteen years, having kept them in large numbers both in this country and America; and I must say I have made but poor use of my advantages of studying them in both countries, if I advocate a colour that is foreign to them.

In conclusion, I wish my fellow breeders and exhibitors to fully understand I do not wish to speak disparagingly of their fowls. All I want is fair play, competent judging, and let the judges prove to us what is the correct colour. I should not have written had not my name been mentioned, and hinted at pretty broadly by some correspondents. I have been, and still am, a successful exhibitor, as reference to the Journal will fully corroborate, and I fully intend to maintain my position.—Henry Lacy, *Lacy House, near Hebden Bridge.*

GAME FOWLS—VARIETIES OF COLOUR.

The different sorts of Game cocks have always been considered as showing the most beautiful variations of colour. The gorgeous, glossy, and royally-coloured red-eyed Black-breasted Reds, tinted and shaded with crimson, or nearly crimson, and blue (the royal colours), showing bright red, golden red, dark blue, steel blue, and dark green; and his rich red Partridge Brown, golden-hackled hen, present the highest type of feathered beauty of all; also, the Red Golden Cinnamon Black-breasted Red with his bright red eye, yellow legs and beak, and beautiful Cinnamon hens to match. The Black-breasted Red is undoubtedly the noblest of all the sorts as to his colour. Then the splendidly-shaped, fierce, and spirited Brown Red, with his rich dark brown red colour, and hard iron-like appearance, and beautiful, dark, hard-looking, fierce hens. The rich-coloured and often gaudy yellow or Birchen Duckwing; the high bred, neat, and chaste-looking Silver Duckwing Grey with his beautiful Silver hens; the keen-looking bright-red blood Pile, a parti-coloured bird, the type of quickness and activity; the spotless milk-white breed with their fierce bright-red eyes like the Pile; the bold, noble-looking, Brassy-winged Black or Sable, with his glossy jet-black hens; the hard, strong, and savage-looking Dark Silver Grey, looking nearly as hard as granite, so to speak, with the Dark Silver hens; the hardy and strong-looking Dark Birchens, or Bark Birchen Greys, with their dark hens; the beautiful yellow-hackled Blue Dun with orange shoulders in the cock; the beautifully-tinted Red Dun or Ginger Blue Red; the curiously-marked Polecat or Dark Tawny, often light-coloured underneath the body; the gay-coloured Spangles and Red Furnaces; the sharp, fierce, and fiery Ginger Reds, as quick as the keenest Pile, and also the type of quickness and activity; the very yellow Yellow Birchens; the neat Mealy Grey breed; the tufted and muffled breeds so seldom seen; the "true Black Reds," dark port-wine coloured, bred from Blacks and Black-breasted Reds (the term "Black Red" being wrong for Black-breasted Reds), the homely hen-tailed cock with his partridge short feather like his hen; and many other handsome crosses and mixtures, one of which is the spirited cross between the Brown Reds and Blue Duns, throwing cocks ginger-breasted with blue thighs, wings, and tails, and yellow-hackled blue hens. (This cross beats all colours in fighting in some places, not excepting Brown Reds and Dark Greys, though not so hard as these, but faster birds. The Dark Grey also crosses well with the Blue Duns for fighting. Blue Dun cocks with Brown Red hens produce most of these, but the Brown Red cock and Blue hen is most used.) All these colours present a picture of all the variations of feathered beauty and colour that no other poultry can possibly present, surpassing even Pheasants of sorts and colours. No wonder amateurs are fond of their Game breeds, long may they be so! The above-named cross is the "Ginger-breasted Orange Blues," called Birchen Blue Reds, or Brassy Blue Reds.

I omitted the following in my foregoing notes. Many breeders say that in crossing colours the most cock chickens take after the hens, and the most pullets after the cock. My own experience and that of my neighbours is exactly the reverse of this. Most of my cock chickens in crossing took after the cock, and most pullets after the hens, in all cases; of course, supposing the cock to be equal to the hens in strength of blood and colour.

A cock chicken is a chicken until his first Christmas, if a spring-bred bird, a "stag" after his first Christmas, and a cock after his second Christmas. A pullet is a chicken until she lays her first egg, and a hen after her second Christmas, a pullet until that time.

In crossing breeds the cock chickens take most after the harder and stronger strain of the two, whether the hens or cock be of the harder and stronger sort; the most pullets being of the softer and weaker strain of the two used.—NEWMARKET.

BEE-KEEPING IN RUSSIA.

(Translated from the German.)

THE gigantic Russian empire comprises, besides the Russians, a great many other nationalities, which are partly scattered and mixed in the whole empire; and other nationalities than the Russian partly prevail in certain districts; but each nationality has generally its peculiar customs and manners, as also, for the most part, its own modes of tilling the ground, rearing cattle, &c. It is also naturally to be expected that the bee is there kept in different ways by the various nationalities, either more rationally or irrationally.

I have travelled pretty much through the whole of Russia; at least, I have visited many governments or provinces of all the four cardinal points, and I find that there is a difference in bee-keeping in the north and in the south, in the west and in the east; but everywhere throughout Russia, bee-keeping is mostly in the hands of the peasants and the clergy. There are few clergymen, in Russia proper at least, who do not keep bees. Also, in many monasteries bees are kept by the monks. In Poland alone, and especially in the provinces on the Baltic, clergymen seldom occupy themselves with bees. Next to the peasants and clergy it is the merchants of the towns, nay even of the largest, as for example Moscow, who keep bees, whilst schoolmasters and government officials do not occupy themselves with bee-keeping at all, as these persons consider it beneath their dignity. Artisans also do not keep bees. There are but very few landed proprietors who possess an apiary, and those that do, attend not to it themselves, but leave it to their inspector or starosta—*i.e.*, elder, who is always a peasant, and is chosen from those who can be most relied on. Only in the provinces on the Baltic, which are for the most part inhabited by Germans, and where the landowners, with the exception of a few Poles, are exclusively Germans, they often take part in it. But bees are kept everywhere, even in the northern government of Archangel, and mostly on a large scale. It is but seldom we meet with a bee-keeper, unless he be a beginner, who has less than a quarter of a hundred hives. They are generally owners of at least fifty to one hundred stocks—nay, towards the south-east, for example the government of Orenburg, even of five hundred to one thousand stocks. Bees are most extensively kept in the eastern governments, in those of Isaratoff, Orenburg, Isimbirsk, Kasan, and Nishay Novgorod, and also in the eastern provinces of Bessarabia, but especially in Podolia, Wolhynia, and particularly in Minsk.

In the whole of northern, middle (excepting the deserts of Tula, Orel, &c.), and eastern Russia, the bees are kept in klotzbeuters,* always in the form of ständers.† In southern Russia where there is no wood, bees are only seen in straw cylinders which exactly resemble our German ones. Likewise, also, in Poland, mixed however with klotzbeuters. In both districts the lager‡-shape prevails. In the Polish provinces of Ismolensk and Witebsk, as well as in the north-western governments of Pskow, Novgorod, and Petersburg, which are inhabited by Russians, one sees only klotzbeuters, as in the north and east, but almost wholly in shape of lager-hives. The ständers, which are very small, are used only for hanging in trees in the forests near the apiary in order that swarms which fly away may enter these hives, which they almost always do. In the Baltic provinces, however, the upright klotzbeuters are the most common bee-hives; also in southern Finnland, at any rate near Abo. Only in southern Curland, on the Witebsk boundary, did I meet with the lager-form.

But the klotzbeuter-lagers in Russia are not, as in many districts of Germany, placed horizontally; one side is always considerably higher than the other, being raised on poles or stones. The swarm in this case, of course, begins comb-building in the highest part of the hive. The straw cylinders, however, mentioned as being used in Poland, in southern Russia, and in the districts of the northern deserts are very seldom placed, as in Germany, in special bee-houses, but for the most part single, a distance of several paces being left between the hives, and each being thatched with straw or roofs of reed, like little houses. The standing klotzbeuters never have a wooden roof throughout all Russia; they are always covered in but a rough manner with the bark of birch trees or firs, the bark being weighted down with stones that the wind may not blow it off.

In the civilised provinces—*i.e.*, the Baltic provinces and Poland proper, which have more or less of European culture, bees are also kept in magazine-boxes by some, and recently even in Dzierzon hives, but they are very few, and scarcely worth mentioning. But in Russia proper no one knows Dzierzon, not even by name, excepting only the professors of zoology. Lately, however, there has appeared a Russian work on bee-keeping, by Professor K——, of the Gorigoretzk Agricultural Institute, originally a German, who mentions something about Dzierzon and Von Berlepsch, but rejects the hives of both these gentlemen as "impracticable," and recommends his own, a depraved magazine-hive. Under such auspices Dzierzon's method certainly cannot find its way into Russia proper.

As to the management of bees, it varies much in different districts. Throughout the whole of the eastern part of Russia they adopt the swarming system, but manage it differently from the Germans. First and second swarms which issue early are planted singly, and wintered as stock hives. As soon as the desired number of stocks are obtained all the swarms which issue afterwards are formed into gigantic colonies. From three, four, five to ten swarms are united in a huge klotzbeuter, so that a swarm thus made weighs from 10 to 20 and more lbs. If several swarms do not issue in one day, so that such a gigantic stock may be made at once, then swarms are added to the young stock one by one. In doing this, the bee-keepers are not particular whether first swarms are united with first swarms, or first swarms with second swarms. The swarms which are to be united are well sprinkled with honey-water, and fumigated very strongly with the smoke of rotten willow wood. The superfluous queens are never removed previously; this is left to the bees. It is strange that in this irrational proceeding but few bees are killed, which is, perhaps, owing to sprinkling them well with honey-water and fumigating them strongly. In autumn, generally in October, these colossuses are sold to the so-called "bee-slaughtermen" (literal translation from the Russian, Pscheloboitschik), who kill them with brimstone, and then prepare an emulsion of honey, brood, bees, and the excrements of cattle with which the interstices of the hives are closed, and sell this mixture in casks of 20, 40, to 60 lbs. and more to merchants in the towns. Parent hives, which are too light, and which have not gathered sufficient food for the long winter, the owners do not sell to "bee-knackers (flayers)," but cut out the combs and let the bees fly where they like. For the bee-keeper in this district thinks it a great sin to kill bees with his own hands; but if he leaves it to the bee-flayers, he, according to his own opinion, has washed his hands of it. Late in the autumn, as soon as snow has fallen, all the stocks are taken into a dark room which is distant from the dwelling-house and not heated, or into some locality built for this particular purpose; the entrances are loosely stopped with straw, and the outside of the building is covered with straw and brushwood. The bee-keeper does not now look after his bees until spring. The stocks are never fed, either in winter or in spring. They leave them always honey enough to have still plenty in the spring. In spring, the second day after having taken out the stocks, which are placed singly in the garden or in the woods, they are examined. First, the lowest door is opened, the dead bees are swept out, and those combs which may have become mouldy are removed, but only those which are very mouldy; for, if possible, no cell of good comb is damaged. The next day, or not till the third day, the head (top) is examined, where

* Hives formed of the hollow trunks of trees.
† Upright hives, having generally two or more compartments one above the other.
‡ Horizontal.

likewise the mouldy comb only is removed, but only in the very worst cases, for the bee-keepers there do not like to cut the top. The loss of queens is generally not perceived until a few days after, when the bees by degrees begin to dwindle away, and bees of other stocks plunder the honey, and then the combs of the queenless stocks are cut out. Throughout the whole empire stocks which have lost their queens are treated alike. In summer the whole care of bees is limited to the temporary opening of the lower door in order to remove the moth larvæ which may have nested there. During the swarming period, which does not begin until the second week in June, a person—generally a young girl or an old woman—is continually watching during warm and dry weather. Everywhere around the stocks several wooden blocks which have been charred all over are fastened on poles that the swarms may settle on them and not fly away. The swarms indeed select these blocks much more frequently than a shrub or tree, but they nevertheless very often fly off into the woods. When putting the swarms into the swarm-basket, the latter is first rubbed with a plant which is there called the deaf nettle, but which is the Leonurus cardiaca, Linn. The bees are said to like the smell of this plant, a fact of which I have convinced myself.—Edward Assmuss.

(To be continued.)

FRAME HIVES—FEEDING BEES.

I have two stocks, swarms of last year, in Woodbury-hives of eight and ten frames, which are so constructed that the hives can be turned upside down if necessary, without fear of the frames shaking. I wish to obtain some honey, if possible, and swarms artificially, as I am occupied with my business during the day. The hives that I have to swarm them in are entirely different from those of Mr. Woodbury, but still frame hives; therefore I am debarred the usual advantage of them. How would it be best for me to act in this case? The food which I give my bees—viz., sugar and water, in bottles always candies and stops the mouth up. How is this to be remedied? and how may I know when a hive has swarmed?—J. C. A.

[We look upon "duality" in the construction of frame hives with quite as little favour as the House of Commons regarded the "dual vote." We should therefore on no account admit any hives into our apiary the frames of which were not interchangeable with all the others.

The syrup which you have been administering to your bees is either overcharged with sugar, or the network which covers the bottle-mouth is of too fine a mesh. We put three parts sugar to two of water, by weight, and use an open leno, the meshes of which are fully one-sixteenth of an inch in diameter. A sudden decrease in the population is the first indication of the escape of a swarm. Whenever this is observed, the fact of a swarm having issued may be readily either verified or disproved by an examination of the hive's interior.]

RANGE OF BEES' FLIGHT.

This is a subject of great importance to bee-keepers, as it has been supposed that bees fly only about three miles when collecting honey, consequently there has been a fear of overstocking an apiary.

Having ascertained that there were no bees on Kelley's Island (Lake Erie), in the spring of 1866 we established an apiary of the Italians there, for the purpose of rearing pure Italian queens and ascertaining the flight of the Italians for food. In less than a week after they commenced flying they were busily at work on the other end of the Island, more than five miles distant from the apiary. This season we shall carry some of them (in a hunting box) out on the water, and ascertain how far they can be induced to work from the hives. We are of the opinion that they will not fly as far across the water as on the land, where there is a continuous supply of flowers to call them from the hives. We shall report further discoveries at the close of the season.—W. A. Flanders (*Prairie Farmer*).

OUR LETTER BOX.

Gapes—Guinea Fowls (*J. Worsfold*).—To cure the gapes give each chicken a piece of camphor daily, about the size of a small pea, and put a lump of camphor into the water they drink from. The hen Guinea fowl utters the peculiar "Come-back" cry. The cock only utters a whining noise.

Hen Eating Her Egg (*Blanche*).—The only course to adopt is to watch her whilst laying, and to remove the egg as soon as it is laid. Have artificial eggs made of chalk or porcelain for nest eggs.

Accrington Poultry Show.—Messrs. S. & R. Ashton, Mottram, Manchester, inform us that they were awarded first prize in Gold-spangled Hamburghs at Accrington Show. It was omitted in the report we received.

Dorking Cock's Comb Bleeding (*A. B.*).—Cauterise the wound, and it will stop the bleeding. We have used lunar caustic for this purpose very freely and with great success.

Failure of Fowls and Turkeys (*L. T. B.*).—Everything seems arranged to go right with your poultry, yet it is evident all goes wrong. While there is no royal road to success, there is no reason on the other hand why failure should be the rule. Do you keep fowls and Turkeys together? If you do, separate them. Have your houses wooden, stone, or brick floors? If they have, remove the floors or cover them with 6 inches thick of earth and gravel. When your chickens are hatched, do you keep them close together? If you do, divide and scatter them about. It is most likely more eggs will come out under the sitting hen if they are moistened for some days before hatching. The chickens that die in the shell die from lack of moisture. When the chickens are out, do not disturb them much for the first twelve or eighteen hours? Then take them as far away from other fowls as you can. Choose for them a dry spot on a slope in the park, if under a bayrick so much the better. Let them be where they will be exposed to the sun, but sheltered from the wind. Place thus your hens and chickens as far apart as you can consistently with their safety. Provide them with beer to drink, road-grit or dust to bask in, and plenty of good food. Above all, keep the hens shut up as long as the chickens require it, certainly from seven to ten weeks; if longer so much the better. This is good for fowls and Turkeys. At this time of year when the mornings are very cold, often frosty, the hen drags either or both of them about till they are completely chilled, they then die with every appearance of rear.

Ducklings and an Artificial Mother (*Henwife*).—We have seen Ducklings reared in the artificial mother of Minasi's incubator, but we do not approve of glass above them. They should *not* have sufficient water to dabble in, and they may be fed on ground oats and meat chopped fine.

Call Ducks (*L. T. B.*).—Your Call Ducks die like other Ducks that are allowed their liberty. Old Ducks fancy their young can follow profitably wherever they themselves go. Towards evening they take their young, only a few hours old, under steep often beetling banks in search of the evening fly. One by one they leave the brood behind. Hens are the most successful mothers because they avoid the water. If you rear under Ducks we advise you to let the old bird sit in a pigstye or place where she cannot get at any water, and yet where the inequalities allow of sufficient moisture to enable them to feed and drink. When they get older, and before they are allowed their liberty, let them have every day a large shallow vessel. Let the bottom be covered with a large sod of grass, on this lay some oats, meal, and gravel. Cover the whole with 1 inch of water. They will thrive well.

Brahma Pootra Pullet Lame (*Brahma*).—We know not to what to attribute the lameness of your hen. It may be accident, and from the suddenness of its appearance we should think it was, or it may be like many of our own ailments, the origin of which cannot be detected.

Non-payment for Poultry (*E. C. Boville*).—It is not a case for our columns, but for the County Court. Employ a solicitor without delay.

Eggs Chilled (*W. W. W.*) —As the eggs were only sat upon three or four days, their being allowed to become cold as you describe will not interfere with their production of chickens.

Preserving Eggs (*A. E. P., &c.*).—The following is from the "Poultry-keeper's Manual:"—"Have large boxes or barrels thoroughly lined inside with paper; put them in a cool but dry place. A layer of fine white salt an inch thick should cover the bottom. New-laid eggs should be laid side by side on this salt, and all vacant spots or places should be carefully filled with it. Successive layers of eggs and salt fill the box, which is then very tightly screwed down, and paper pasted over the joints. Fine white salt is preferable. On the 1st of August, 1849, M. Jacques opened a case of six hundred eggs, preserved in September, November, and December, 1848—that is to say, eleven months after they were put away; although they no longer possessed the delicate flavour of a new-laid egg, they were well-kept, and well-tasted—good enough for any domestic use."

Runt Pigeons (*C. S.*).—By all means try Runts, and send us your experience. They are noble Pigeons, and ought to be thought more of. Some years since we had Spanish Runts, and very large and long-bodied they were. They brought up their young ones well, and we did not find them delicate or liable to disease. Try to avoid breeding in-and-in; start with breeds that are not related to each other, and by exchanging, or other management, prevent near relations being paired. If you succeed in making Runts popular you will confer a national benefit, as many would then keep them for the table, and be proud of their size, as Dorking-fanciers are of the legs of their birds. Have roomy nests, low perches, and you must not expect much flying from them. A low outhouse, if safe from rats and cats, makes a good home for Runts.

Feeding Bees (*Bee-keeping Subscriber*).—There does not appear to be any pressing necessity for immediate feeding, but if the present broken weather continues, the administration of a moderate quantity of food may not be unadvisable.

POULTRY MARKET.—April 24.

We have a great scarcity of good young poultry. Trade is deplorably bad, or there would not be sufficient to supply London. There is not an average quantity at market.

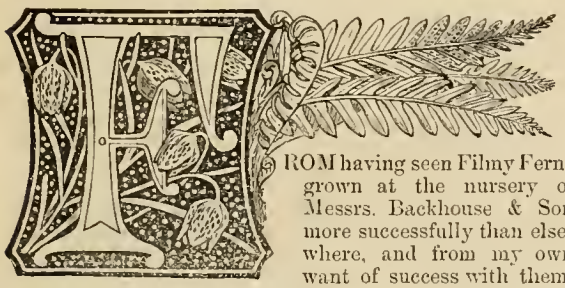
	s. d.	s. d.		s. d	s. d
Large Fowls	4 6	to 5 0	Pheasants	0 0	to 0 0
Smaller do.	3 6	4 0	Partridges	0 0	0 0
Chickens	3 0	3 6	Grouse	0 0	0 0
Goslings	7 0	7 6	Guinea Fowls	3 0	2 6
Ducklings	5 0	5 6	Rabbits	1 4	1 5
Pigeons	0 8	0 9	Wild do.	0 8	0 9

WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 2—8, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
2	Th	Meeting of Royal and Linnean Societies.	62.7	39.4	51.1	14	33 af 4	21 af 7	58 af 3	1 af 5	28	3 6	122
3	F		62.0	40.2	51.1	19	31 4	23 7	29 4	17 6	29	3 13	123
4	S	Royal Hort.Society, Show and Promenade.	62.3	38.8	50 5	15	29 4	24 7	2 5	35 7	●	3 19	124
5	Sun	2 Sunday after Easter.	62.7	38.9	50.8	21	27 4	26 7	41 5	51 8	1	3 25	125
6	M	Meeting of Entomological Society, 7 P.M.	62.0	38.5	50.2	16	25 4	28 7	27 6	1 10	2	3 30	126
7	Tu	Royal Hort. Society, Special Prize Show.	59.4	39.5	49.4	17	24 4	29 7	21 7	2 11	3	3 35	127
8	W	Meeting of Society of Arts and Microscopical Society, 8 P.M.	59.1	39.3	49 2	17	22 4	31 7	23 8	55 11	4	3 39	128

From observations taken near London during the last forty years, the average day temperature of the week is 61.5°; and its night temperature 39.2°. The greatest heat was 84°, on the 6th, 1862; and the lowest cold 21°, on the 8th, 1855. The greatest fall of rain was 1.26 inch.

CULTURE OF FILMY FERNS.



FROM having seen Filmy Ferns grown at the nursery of Messrs. Backhouse & Son more successfully than elsewhere, and from my own want of success with them, except when covered with bell-glasses, I was led to take an interest in them, and to try to find out wherein the secret of their culture rested, and not without success.

Growing Filmy Ferns under bell-glasses, or glass shades, is, no doubt, the only eligible mode of culture where the atmosphere is only moist enough for greenhouse or stove plants, and where they are kept in pots or pans along with other Ferns; but it interferes so much with their being seen to the best advantage, that it is only tolerable where the means do not permit of their being otherwise cultivated. I am persuaded that with but a slight expenditure we might have these plants in beauty at any time. Those who have ferneries in which the Ferns are planted out on rockwork will not experience any difficulty in the culture of Filmy Ferns if they provide for them a cave or well, with water dripping from the roof or top, by which the atmosphere around, and the stones, on which the rhizomes run, will be kept constantly moist. So numerous, however, are the species now that a house may be specially devoted to their cultivation, and that I shall first proceed to notice.

The tropical species thrive well, write Messrs. Backhouse, "in a low span-roofed house, heated by hot water circulating in open brick tanks, and slightly shaded;" whilst the New Zealand, Chilian, and Tasmanian species "succeed well in our ordinary (cool) fernery without any glass shades: the glass roof being externally covered with a thin coating of white paint, and the atmosphere kept constantly humid."

To make a digression, which I hope the reader will pardon, I think that for Ferns to be seen to the best advantage they should be associated with kindred subjects. For instance, where there is a rockery of any considerable proportions it should be occupied with Alpines, and near it might be the hardy fernery, having the northern aspect of the rockery. I would here introduce ferneries of glass for the more rare and less hardy kinds of Ferns, having first a cool house for the best of the hardy British and exotic species and varieties; then a house for Ferns from temperate climates, and large and lofty enough for tree Ferns, these being disposed in irregular beds on the ground, and not on raised rockwork: and a third house for species from hot countries. In each of these houses I would have a recess of sufficient size to allow of a person standing in it and viewing the plants, and having an entrance as large as a fair-sized door. I would not use a brick in the construction of the houses, but would build the walls of limestone rock and large pieces of sandstone, and I would use no glass except for the roofs, which should extend over every part, even to the recesses for the Filmy Ferns. Any difficulty in making the opening in the walls could be surmounted by filling them up with small pieces of rock and mortar. I would have nothing objectionable to the eye but the necessary doors, and places for heating might by a little care in the disposition of the rockwork be readily arranged. The above would be a more natural and agreeable disposition of ferneries in gardens than that generally adopted, and it would not be more costly, whilst the wants of those kinds thriving outside, as well as Alpine plants, which of late years have been much neglected, would be provided for.

Filmy Ferns are the least exacting of all plants. They require an atmosphere which is constantly humid, an open porous soil, and a moderate amount of air. The above conditions cannot be secured in ordinary ferneries, and I therefore advocate devoting specially to Filmy Ferns either part of the house or a small house. The latter I would make in the ground, or against the side of a bank, covering it with rough plate glass. The interior fittings should be formed of rockwork, employing gritty sandstone, and if moss-covered all the better. The floor should be formed of rough stones, and the heating apparatus should be hot-water pipes passing through open tanks made of bricks and cement. The tanks may be easily hidden by rockwork. The best stock bricks, or, still better, blue fire-bricks, should be used. Provision must be made in the centre of the glass roof for admitting air, which should not be given at the sides nor immediately over the plants, and never in excessive quantity. If a division is made with rockwork, or the fernery is narrowed in the middle, a doorway only being left, one end may be used for the tropical species and the other for those from temperate regions, requiring artificial heat only in winter to protect them from frost, for which purpose two hot-water pipes all round will be ample: these may be hidden by rockwork, and should never be made very hot. Unless the house is more than 12 feet wide, a brick tank, 1 foot wide and 1½ foot deep, with two four-inch hot-water pipes in it, all round the house, will be ample for the tropical species; for the house being against a hill, and in a manner in the ground, the temperature and humidity will be more equable than where the house is above ground. If there is a shallow stone reservoir in each compartment, by keeping it full of water the requisite degree of humidity may be more easily maintained than where such does not exist. In the arrangement of the rockwork it should be remembered that all the species are not the same in their requirements; some parts of it should be made prominent, in others there should be recesses or nooks, and some must be close to the glass, and near the points of air-giving. If this be done with taste the house will be everything that could be desired, for there will be places more shady than others, some airy, and some where the atmosphere can be kept more close and wet than in others.

As to soil for filling up the interstices in the rockwork and for planting in, it is hardly necessary to do anything in the matter, for Filmy Ferns do not require rich soil. We may employ a compost of equal parts of turfy brown peat, such as is used for Orchids, and chopped sphagnum or bog moss, the peat being broken with a spade, adding to it an equal quantity of sand or broken gritty rock from the size of a hen's egg to that of a pea, the whole being well mixed and incorporated, and placed in the interstices and hollows. In any prominent position more soil should be used, and, omitting the sphagnum, such kinds as Todea pellucida may be planted there.

Previous to planting, the house should be syringed twice daily, and every part made thoroughly moist. The planting is difficult to describe; for some kinds it merely consists in placing them on a ledge of rock, for others in putting them in a crevice and laying a few pieces of grit around them to maintain them in position, whilst for others, again, the trunk of a tree Fern is set on its end or laid on its side in a corner; others must be furnished with soil beneath and around them, but in no case should they be buried or covered. When in position they should be sprinkled overhead twice daily, and every stone both of the floor and rockwork ought to be kept constantly wet. It is not possible to have a syringe with too fine a rose, for water cannot be sprinkled over them too finely. Some kinds are impatient of water on the fronds, these will be named hereafter. The stones and every available surface being sprinkled twice daily from the tanks or reservoirs in the centre of the houses, and the water being directed with force against them, further watering may in most instances be dispensed with, as the moisture will run from the rockwork to the roots of the Ferns, and be dispersed over their fronds in the form of a thick mist. If there be sufficient moisture it will hang from the points of the fronds, which will be "covered with minute dew-like drops every morning," as Messrs. Backhouse describe. The amount of moisture, as shown by a hygrometer, is complete saturation, and if not so much it is too dry for Ferns of this class. If the rock and floor be kept wet the amount of moisture will not be far deficient.

As to air-giving, that is equally difficult of description, for air must not be admitted so freely as in the case of plant-houses generally, and yet it is essential. There must be no cold draughts, and yet air must be afforded daily, and, indeed, constantly, but in very moderate quantity. Anything approaching a confined atmosphere is injurious, for though Filmy Ferns flourish in humidity, they also delight in fresh air. Air, then, should be given in such a quantity and manner as not to dry the atmosphere more than can be avoided. More air is, of course, necessary by day than night, and in this respect they require nearly if not quite as much air as Ferns generally, only the ordinary kinds are less susceptible of its drying influence. Give them air if you do not wish the fronds to become brown before they are well developed, at the same time see that it does not render the atmosphere deficient in humidity. The amount of air may be liberal if the necessary humidity is maintained.

Temperature is an all-important point; the stove kinds generally will be found to do well in a winter temperature of from 50° to 60°, increasing with sun or the heat of the external air to not more than 65°, and this temperature should be maintained from October to March. In March the temperature should be slightly increased, and go on gradually increasing until from 75° to 80° be attained, which may occur by the middle of May, or from that time to June. At this temperature the house should be maintained to the end of September, when its heat should be allowed to decline so as to fall to a minimum by the close of October. This temperature will be sufficient for the majority of the West Indian and tropical species, but a few require a greater degree of heat; still they may be accommodated in one house by having the warmest places assigned to them.

The kinds from Chili, New Zealand, and Tasmania succeed admirably in a winter temperature of 40° as a minimum, fire heat being only employed to prevent the temperature from falling below that point, and the general winter and summer temperature will be regulated by the external air; this being the case, the minimum in summer will be 60°, and the maximum between that and 80°, but generally about 70°.

As regards shade, I have found nothing equal to a thin coating of white lead paint put on when the external surface of the glass is thoroughly dry, and dabbing the paint before it dries with a painter's dust-brush. This shading I find ample.

I have already stated that some kinds are impatient of water on the fronds, and some require more air than others, whilst others differ in the matter of humidity and shade, and these points I hope will be gleaned from the following list of species, which is based on the catalogue of Messrs. Backhouse.

Stove Species, requiring a temperature of from 55° to 60° in winter, and one of 80° in summer:—

Trichomanes anceps, 1½ to 2 feet high, forming tufts. West Indies. Very humid and rather close atmosphere. This is one of the best. Temperature* 55° to 80°.

T. Bojeri, very small, requiring to be grown on the trunk of a Palm tree or tree Fern, which it is said to clothe in the Mauritius. The atmosphere requires to be very moist. It should have a position in the warmest part of the house. Temperature 60° to 80°.

T. attenuatum, a fine species, closely resembling T. alatum, found on trunks of trees in the West Indies, and doing well on them in this country, as also in chinks of rock. The atmosphere must be very humid and somewhat close. Temperature 55° to 80°.

T. alatum, 1 foot high, tufted, growing on trunks of trees like the last, and will thrive on blocks of wood or in crevices of rock. Temperature 55° to 80°.

T. achilleæfolium, handsome, tufted, 1 to 1½ foot in height, requiring a very humid and close atmosphere. This needs to be placed in the warmest part of the house. Temperature 60° to 85°.

T. Bancroftii small and tufted, 3 to 5 inches high. To be kept humid but airy.

T. crispum, 18 inches high, tufted and handsome. Very humid but airy. Will do in a cool part of the house. 55° to 75°. West Indies.

T. crinitum, tufted; requiring the soil to be very well drained, a humid atmosphere, but no water on the fronds. It should have a cool situation. 50° to 75°. West Indies.

T. elegans, 9 to 12 inches, needing the warmest part of the house, and to be kept very humid and close. 65° to 80°. West Indies.

T. Filicula, creeping. It requires to be kept very humid and somewhat airy. Afford it a warm situation. 65° to 80°. Mauritius.

T. javanicum, tufted, 9 to 12 inches high. A very humid and rather close atmosphere. Java and Philippine Islands.

T. floribundum, requires a clayey soil mixed largely with silver sand and a little peat or leaf mould, and to be kept very humid and close. Tufted, 1½ feet high, and fronds very noble in appearance. Should have a warm part of the house. 65° to 80°. West Indies.

T. fimbriatum, allied to T. Kaulfussii, needing very moist soil, and a humid and somewhat close atmosphere. 55° to 80°. West Indies.

T. Kaulfussii, tall (1 foot high); soil firm and very moist; atmosphere humid and rather close. It should have the warmest part of the house. 65° to 85°. West Indies.

T. Kraussii, small and creeping, requiring to be grown on a piece of the trunk of a tree. It requires to be kept humid and airy, and will succeed in a cool part of the house. 50° to 75°. West Indies.

T. Luschnatianum, a climbing species, rambling over mossy rocks, and succeeding in a cool part of the house. Humid and rather airy. 55° to 75°. Brazil.

T. muscoides, creeping, needing a warm situation, and a humid and rather close atmosphere. 65° to 85°. West Indies.

T. membranaceum, creeping, requiring a warm situation, and a very humid and rather close atmosphere. 65° to 80°. West Indies.

T. pluma, as yet very rare, erect, 1 foot high: requires to be grown amongst decayed logs of wood and moss, and kept very humid. This will do in a cool part of the house. 50° to 70°. Borneo.

T. pyxidiferum, creeping, growing on trunks of tree Ferns or stems of Palms. Humid and rather close. 55° to 75°. West Indies.

T. reptans, very small, requiring the stem of a Palm or tree Fern to grow on, and to be kept very humid and rather close. 55° to 80°. West Indies.

T. rigidum, 1 foot high, tufted, requiring to be kept very humid but airy. 55° to 80°. West Indies.

T. rhomboideum, resembling T. javanicum, and, like it, from the Philippine Islands; 1 foot high; needing to be kept very humid and in the hottest part of the house. 65° to 85°.

T. scandens, creeping; needs to be grown on the stem of a Palm or tree Fern, and to be kept humid but airy. It will do in the coolest part of the house. 50° to 70°. West Indies.

T. rupestre, tufted; grows on bare wet rocks. It should have the hottest position. 70° to 80°. Borneo.

T. sinuosum, climbing on trees in the West Indies, and requiring to be grown on logs of wood, and to be kept very humid and rather close. Will do in a cool position. 50° to 75°.

T. thujoides, 1 foot high, tufted. To be kept very humid and rather close. 60° to 85°. Mauritius.

T. spicatum, to be kept very humid and rather airy. 55° to 75°. West Indies.

T. trichoideum, creeping, requiring to be kept very humid and rather close. 55° to 80°. West Indies.

Hymenophyllum asplenioides, requiring to be grown on mossy rocks or logs of wood; to be kept very humid but rather airy, and watered freely. 55° to 75°. West Indies.

* The temperature requisite for each kind is here stated, as it may be useful to those who wish to grow them in Wardian cases, for which these plants are well suited. The temperatures are as given by Messrs. Backhouse & Son.

H. abruptum, should be grown on mossy rocks or trunks of trees, in a cool, humid, and shady position, and well-ventilated atmosphere. 50° to 70°. West Indies.

H. ciliatum, grows on mossy rocks or trunks, and should be kept very humid and rather close. 50° to 75°. West Indies.

H. hirsutum, grows on logs of wood, and should be kept very humid but airy, and ought not to be watered over the fronds. 55° to 80°. West Indies.

H. hirtellum, a fine Jamaica species, which requires to be kept very humid and airy. 50° to 80°.

H. Plumieri, to be kept very humid and airy. 55° to 80°. West Indies.

H. sericeum, grows on rocks in the West Indies, and thrives best on them in this country. It should be kept very humid but airy. It dislikes water on the fronds. 55° to 75°.

Greenhouse Species, requiring a temperature of 40° in winter:—

Hymenophyllum æruginosum, growing on rocks and mossy logs; should be kept humid and rather close, and watered freely, but not over the fronds. 40° to 65°. New Zealand.

H. candiculatum, needs a compost of decaying wood or mossy logs, and a very humid and rather close atmosphere. 40° to 65°. Chili.

H. chiloense, on mossy rocks and logs, and to be kept very humid. 40° to 65°. Chili.

H. crispatum, needing the trunk of a Palm or tree Fern, and to be kept very humid but airy. 40° to 65°. New Zealand.

H. cruentum, should have a mossy log of wood, a very humid atmosphere, and a rather shady situation. 40° to 65°. Chili.

H. demissum, 1 foot high, requires to be kept humid but airy. 40° to 65°. New Zealand.

H. dichotomum, requires a mossy log of wood, a very humid atmosphere, and a shady position. 40° to 65°. Chili.

H. dilatatum, needs a compost of decaying wood, leaf mould, and moss. A very humid rather close atmosphere, and a shady position. 40° to 65°. New Zealand.

H. flabellatum, grows on the trunks of tree Ferns or of Palms. It should be kept very humid, and rather airy. 40° to 65°. Tasmania.

H. flexuosum, needs the trunk of a tree Fern or mossy log, and must have a very humid and rather close atmosphere. 40° to 65°. New Zealand.

H. fuciforme, 18 inches to 2 feet high. Needs to be kept very humid and rather airy. 40° to 65°. Chili.

H. polyanthos, requires to be kept humid and airy: it does not thrive under a glass shade. 40° to 70°. New Zealand.

H. pulcherrimum, needs a very humid atmosphere. 40° to 65°. New Zealand.

H. rarum, very like H. tunbridgense, needs to be kept very humid but airy; avoid wetting the fronds. 40° to 65°. New Zealand.

H. scabrum, must be kept very humid and rather airy. 40° to 65°. New Zealand.

H. tunbridgense, grows on mossy rocks or in chinks of rock, and should be kept very humid and rather airy: avoid wetting the fronds, as they quickly become discoloured. 40° to 65°. Well known to be a British species.

H. unilaterale (Wilsoni), grows on mossy wet rocks, and should be kept very humid but airy. 35° to 60°. British species.

Trichomanes elongatum, 6 inches to 1 foot high. Tufted. Requires a very humid and rather close atmosphere. 40° to 65°. New Zealand.

T. exsectum, creeping, on ledges of rock. Must have a very humid and rather close atmosphere. 40° to 65°. Chili.

T. radicans (speciosum), flourishes on rather mossy moist grit. It needs a very humid and rather close shady atmosphere. 40° to 70°. Ireland, also Madeira.

T. radicans Andrewsii. The fronds of this are lanceolate instead of triangular-ovate as in the species, and it fruits freely.

T. reniforme, creeping on mossy rocks. A very humid and rather well-ventilated atmosphere. 40° to 70°. New Zealand.

T. venosum, should be grown on the trunk or part of a tree Fern, and must be kept very humid but rather airy. 40° to 65°.

To the above may be added the three Todeas—viz., arborea, australis, and pellucida, which should be planted in peat, pieces of sandstone or grit, a little leaf mould, and sand, affording a rather airy situation, and no water over the fronds.

A correspondent wishes to know the reason of the fronds of Filmy Ferns becoming brown. This, as far as I have experience, is the result of variable humidity, they being sometimes dripping wet and at others quite dry. Excessive moisture will, in many cases, cause the evil, especially when there have been heavy syringings, which should be avoided, as water ought never to fall upon them with force, but always like dew; at the same time the atmosphere should be kept constantly humid. Some kinds will not endure much syringing over the fronds, and all are better if the requisite amount of moisture can be kept up without it; but in many cases this cannot be done. A frequent cause of the fronds becoming brown, is their being stifled under glass shades, the moisture remaining on the fronds from morning to evening. A little air would in such cases make all right, but if air be admitted excessively, the young fronds will perish before they unfold, and the same result, along with browning of the fronds, takes place in a very close atmosphere. Filmy Ferns like most other plants require fresh air, moisture, and water, but the air must not reduce the humidity of the atmosphere, which must be constant, and water should not be allowed to lodge but pass away freely, it being as freely replaced.

I may now offer some remarks on the culture of Filmy Ferns in ordinary ferneries. These seldom possess sufficient humidity, but the plants may be grown in them in cave-like recesses made for the purpose, and which may be formed of grit or sandstone. These should not be deep, otherwise they will be too gloomy. If a pipe can be carried over the recess, so that by opening a tap a slight run of water can be produced over the top, the water percolating through the crevices of the stone roof will fall from the latter in large drops on a large stone forming the bottom of the cave or recess, and will be thrown on the stones or rock for some height and distance. This will be sufficient in most cases to afford a constant supply of moisture by the evaporation continually going on, and is far superior to any syringings; but when it cannot be adopted every surface must be sprinkled twice daily. The finest-rosed syringe only should be employed. If the house is sufficiently humid, every morning the fronds will be covered with minute dew-like drops of water, and if it is not so moist as this the plants will soon become brown, and the young fronds perish. It is useless attempting the growth of Filmy Ferns in an ordinary fernery unless suitable places are provided for them, for, as before remarked, it is seldom sufficiently moist, or if it is, it will be too much so for some kinds of Ferns, especially in winter when their fronds are mature. For this reason Filmy Ferns are generally grown under glass shades, where, however well cared for, they seldom remain long healthy, which is mainly to be attributed to the closeness of the atmosphere.

The pans in which the plants are grown cannot be too well drained, and should be filled with the compost already mentioned, the plants being placed in the centre, and the surface of the soil covered with pieces of sandstone, but not entirely. The shades should rest upon fine pieces of grit, and any water that may be necessary for moistening the roots should be poured upon the glass, and should pass clear away, and not be retained about the roots by having the pans in saucers filled with water. To maintain the requisite degree of humidity the shades should be removed, and the plants sprinkled overhead once or twice a-day, or once or twice a-week, as may be necessary, in order to have the shades covered with moisture every morning, and the fronds studded with minute drops of dew from the condensation during the night. To keep the plants healthy there should be one hole at the top of the glass for the admission of fresh air, or the escape of that which is vitiated, and two or three holes when the shades are large. Different species of course vary in respect to the treatment they should receive, but all require air, constant humidity, and a free, moist, sweet soil. With stagnant water in the soil and an excessively humid and close atmosphere, they will not thrive; in fact, some kinds require so much fresh air that they soon become unhealthy under glass shades. The shades should be taken off occasionally and wiped dry, and if this is done every morning all the better, replacing them before the fronds become dry. So important, indeed, is fresh air to this class of Ferns, that it is preferable to grow them in Wardian cases with moveable lights, placed in houses having the requisite temperature and shade. In cases, the plants can be well provided with every essential to their growth; those which grow on wood can be placed on logs laid in a suitable position, all can be readily syringed, any amount of water may be given, and they can be seen at any time. In any ordinary fernery the lights of the case may be half, or fully open, as the sides will prevent an undue amount of moisture being dissipated, and an excess of it may be dispelled by raising the lights, whilst that which is necessary can be secured by shutting them partially, or completely. At night the lights should be fully or nearly closed to promote condensation and the deposition of dew on the fronds, and if the moisture is not excessive it will not do more than hang in the finest possible drops on the fronds of the beautiful and delicate-textured Filmy Fern.—G. Abbey.

CUTTING BOX EDGINGS.

As the season for cutting the edgings of walks has now arrived, I write to recommend the grass-edging shears for cutting Box edging. I have used them for many years, and I find them

greatly superior, by reducing the time required to do the work, and easing the workman, to the hedge shears or scythe, both of which I have ceased to use for the purpose. In large gardens where there is much of this work to do, grass-edging shears will be found very useful. The work can be done without using the line, or topping, and if the edging be cut every year, this may be done very speedily. I believe this tool has been used by others, but not so much as is desirable, for cutting Box edgings.—James Reid.

CULTURE OF TRICOLOR PELARGONIUMS—TURF SOIL FOR POTTED PLANTS.

In your number of April 18th, Mr. Wills recommends fresh turfy loam and bone dust, and manure water when the pots are well filled with roots. I know the plants will grow amazingly in this compost, and the young leaves are very nicely coloured, but as they develope themselves the colours lose their brightness and regularity, and the leaves become very large and soft, and lose that fresh appearance which I consider so essential in this section of Pelargoniums.

I practised that method of growing them three years ago, and strongly recommend it when the object is to increase the stock quickly; but I now, in growing specimens for the decoration of the conservatory, dispense with the fresh loam and manure water, and use the loam with the fibre in it quite half-decayed to feed the plants instead. I find them make sturdier and shorter-jointed growth, smaller leaves, which retain their freshness of colouring a greater length of time, and the plants exhibit altogether a much smarter appearance than when grown soft and luxuriantly. I do not think boiled half-inch bones have this objectionable effect, and though I have not recommended them in my book on the hybridisation* of this class of Pelargoniums, I believe such may be used with advantage; but I cannot perceive what use a 32-sized-potful of the bones in a barrow-load of compost can be. I have used three times that quantity, but I consider it very extravagant, unless the plants had to remain in the same soil for a long period.

I do not understand what Mr. Wills means by a temperature of 55° or 60° for the atmosphere, and of 45° or 50° for bottom heat in the propagating-house; the small thumb-pots, which are about 1¼ inch deep, to be partially plunged. This would suggest the idea that an inch of the material on the surface of the bed should be 10° lower than the atmosphere in the same house. If there is any misprint here I think it would be as well to draw attention to it, as I have known amateurs very much perplexed by trifles of this sort, in trying to adhere strictly to instructions laid down for them.

The cuttings strike very freely in a temperature of from 55° to 60° in my propagating-house, on the platform, which has three hot-water pipes (four-inch), underneath it, all on the same level, about 6 inches lower than the under surface of the platform, which is 7 feet wide; the flow-pipe runs down the middle. There is a T-pipe at the extreme end from the boiler, then an elbow on each side, and a return-pipe runs down each side of the flow the full length of the platform, which is formed of slate, supported by brick pillars 4 feet apart.

I find Pelargoniums and all softwooded plants strike freely on this platform, either in or out of pots. There are no other pipes for heating the atmosphere. The platform is 4 inches from the front wall to allow the heat to come up; of course there is nothing to prevent its rising at the back where the path runs.

Much having been written of late respecting the use of fresh turfy loam for general purposes, I beg to state the results of my experience for the benefit of amateurs who, I know, look so anxiously after information of this sort. As a rule, I use fresh turf for Vines, or anything that has to remain a long time in the same soil or pot, as Camellias; but for anything that is required to develope itself quickly, and do the whole of its work in the period of two or three months after the last shift, and is then shaken out of the pots, as are Pelargoniums and most softwooded plants, I prefer having the turf quite half decayed. Also, for Cucumbers, I prefer it thus decayed, as it is ready for them to feed upon at once, and they make stouter and shorter-jointed growth.

I am afraid that those who use loamy turf for Azaleas will find themselves in a bad way in two or three years, just when their plants should be at their best. I have used it, and am thoroughly acquainted with its effects.

As regards making moderately-large heaps of turf—say 3 feet wide, and 4 or 5 feet high, to decay for potting purposes, I can see no objection to the practice. I once made a very large heap of turf that was taken from a field that was to be ploughed, which had never been broken up before "in the memory of the oldest inhabitant." The third spring from the time that it was stacked I found it suit my purpose better than it had done before. In fact, I never had plants succeed so uniformly. I am quite decided it was more valuable in that state than when fresh, consequently I recommend such turf in all cases where the plants are required to do their work in a short period of time. I know a specimen plant-grower, probably the best in England, who stacks his turf in very large heaps.—T. Dixon, *Gardener, Waterdale, Sutton, St. Helens.*

* Mr. Dixon calls it hybridisation, but, strictly speaking, it is cross-breeding.

ROYAL BOTANIC SOCIETY'S SPRING SHOW.

This, the last spring Show for the season, was held on Saturday and though the showers in the forenoon were frequent and heavy, the afternoon was tolerably fine, and there was even some sunshine.

Roses again constituted a leading feature, and among those shown by Messrs. Turner, Paul & Son, and Lane, were specimens which for beauty and profusion of bloom it would be difficult to surpass at any season. For nine, Mr. Turner was first with Charles Lawson, very fine, a magnificent specimen of Victor Verdier, and Alpaide de Rotalier, Lord Clyde, Maréchal Vaillant, Professor Koch, Celine Forestier, with thirty blooms, Madame Villermoz, and Souvenir d'un Ami, all of which were excellent. Messrs. Paul & Son, who were second, had of rose-coloured kinds, beautiful specimens of Anna Alexieff, and Madame de Stella; Lord Clyde, and Madame Boutin, crimson; Le Rhone, deep red; and of Tea varieties, Alba Rosa, Souvenir d'Elise, President, and Souvenir d'un Ami. Messrs. Lane & Son were third with very good specimens of Vicomte Vigier, Pierre Notting, with numerous rich velvety dark crimson blooms; Jean Goujon, rich violet-shaded crimson; Anna Alexieff, Comtesse de Cabrillant, and Triomphe de Morny, different shades of rose; Louise Darzens and Madame Alfred de Rougemont, white. Messrs. Lane also exhibited a small collection, for which they were awarded an extra prize.

In the Amateurs' Class good specimens of François Lacharme, Madame C. Wood, Jules Margottin, and others from Mr. James, gardener to W. F. Watson, Esq., Isleworth, and Mr. Wiggins, gardener to W. Beck, Esq., took the first and second prizes.

For new Roses of 1864, 1865, and 1866, Messrs. Paul & Son were first with Fisher Holmes, velvety crimson; Princess Mary of Cambridge, pale rose; and Duchesse de Caylus, bright carmine. Mr. Turner was second with Duchesse de Caylus, Maréchal Niel, very fine, and Mademoiselle Marguerite Dombrain, delicate rose colour. Messrs. Lane, who were third, had Dr. Andry, cherry red; Marcella, salmon rose, shading off to white; and Duke of Wellington, shaded velvety crimson.

Several boxes of cut blooms were shown, in which were fine examples of Maréchal Niel, John Hopper, Exposition de Brie, Camille Bernardine, Mdlle. Marie Rady, Madame C. Wood, Celine Forestier, and Vicomte Vigier; but the gem of the whole was Maria Baumann, bright red, shown by Mr. Turner. Messrs. Paul & Son had a first prize for twenty-four blooms, Mr. Turner being second, and were also first for miscellaneous boxes.

Of Pelargoniums Mr. Wiggins was the only exhibitor, taking the first prize with, for this season, finely-bloomed specimens of Vestal, Beadsman, Roseum, Pline, and Madame Reicie.

Mr. James had extra prizes for Calceolarias, of a very good strain, and Cinerarias; and a similar award was made to Messrs. Dobson and Son for nine Azaleas, among which were Reine des Doubles, bright rose, and Baron de Vrière, blush, heavily spotted with rosy crimson in the upper petals.

Of Auriculas, the best were those shown by Mr. Turner, of Slough, who had Lycurgus (Smith), Duke of Kent (Dickson), General Bolivar (Smith), Sophia (Chapman), Fair Maid (Lightbody), and Metropolitan (Spalding). Messrs. Dobson & Son were second in the nurserymen's class, and in that for amateurs Mr. Butcher, of Camberwell, was first with Sophia (Chapman), John Penn, Robert Traill (Lightbody), Blucher, and Bright Phœbus; Mr. Cox, Camden Town, and Mr. James being second and third. Mr. Turner also exhibited several seedlings, of which Crown Prince, mulberry self, Cheerfulness, Colonel Champneys, and Charles Turner received first-class certificates; likewise a fine collection of Alpines. Of these Lustre, rich reddish brown, had a first-class certificate, whilst Defiance, Jessie, Trumpeter, Selina, and Vivid were awarded certificates of the second class.

Of Pansies, the best twenty-four cut blooms came from Mr. James, Mr. Hooper, Bath, being second; and the first-named exhibitor also took an extra prize for excellent plants in pots, the varieties being Masterpiece, Dux, Imperial Prince, and Rev. H. Dombrain, dark selfs; Vesta, primrose self; Wm. Austin, J. B. Downie, Chancellor, and A. Wharrard, yellow grounds; and Cupid, Miss E. Cochrane, and Lady

E. Stanley, white grounds. Messrs. Downie, Laird, & Laing, also exhibited blooms of Imperial Blue, purplish blue, with a yellow eye and a dark blotch on the lower petal. This variety, which has been exhibited on several previous occasions and taken certificates, promises to be useful for bedding.

Collections of fine-foliaged and flowering plants from Mr. Williams, Holloway, Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., and Mr. Burley, Bayswater, received prizes in the order named, and comprised Croton variegatum, Yucca aloifolia variegata, and Cordyline indivisa, all of which were fine specimens; Imantophyllum miniatum with eight heads of bloom, Eriostemon pulchellum, Azaleas, the pretty rosy-flowered Adenandra fragrans, Alocasia metallica, variegated Pandanus javanicus, Palms, and Dracænas. Mr. Williams also had an extra prize for a miscellaneous collection, in which were the beautifully-striped Yucca quadricolor, good specimens of Agave filifera, Dasylirion acrotrichum, Todea superba, Palms, Orchids, the scarlet-spathed Anthurium Scherzerianum, and some other plants.

Of new and rare plants Mr. Bull furnished a rather numerous collection, comprising Rogeria gratissima, Chamærops melanocantha in flower, Saurauja sarapigiensis with bold reddish bronze-like foliage, Bertolonia margaritacea, Dieffenbachia Weirii with dark green foliage mottled with yellowish green, Athyrium proliferum, an elegant stove Fern from Ceylon; also the following, which received first-class certificates—viz., Coprosma Baueriana variegata, a New Zealand plant, with obovate leaves broadly edged with yellow; Dioscorea discolor variegata, with leaves richly mottled with brown and green; Anæctochilus Dayi, dark green, veined with red; A. petola marmorea, deep brownish green, with beautiful pale green, almost silvery markings; Terminalia elegans, with dark-veined pale green trifoliate leaves, having narrow leaflets with red midribs; and Adiantum Lindeni, a handsome robust-looking stove Fern. Second-class certificates were given for Athyrium costale dissectum, a pretty East Indian Fern, and Azalea Queen of Roses with large rosy crimson flowers. The latter being also shown by Mr. Williams under the name of Reine des Roses, a similar award was made to him. To Mr. Williams first-class certificates were awarded for Stenochlæna heteromorpha and Amaryllis aurantiacum, the latter having showy orange red flowers, with a greenish white centre; and apparently the same variety in a smaller state came from Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton. Mr. Wilcock, gardener to Dr. Pattison, St. John's Wood, exhibited a Dendrobium called Farmeri aureum-flavum, but resembling D. chrysotoxum, the little white-flowered D. Heyneanum, and the showy orange-flowered D. Cambridgeanum. Lastly, Mr. Burley exhibited a plant belonging to that curious genus Xylophylla, in which the flowers are borne on the margins of the flattened leaf-like branches, as in the specimen shown.

Among miscellaneous subjects extra prizes were awarded to Mr. James for a collection of British Ferns, and to Mr. Bull for two plants of Agave filifera, each globular and about 18 inches in diameter, and the two so nearly alike that it would be almost impossible to distinguish one from the other. An extra prize was also awarded to Mr. Gardiner, gardener to Sir G. Phillips, Bart., Shipston-on-Stour, for a good dish of Peaches for the season. Mr. Wiggins contributed some fine Polyanthuses, Mr. Ward, gardener to F. G. Wilkins, Esq., Cattleya citrina with five of its showy yellow flowers, and Messrs. Ivery a basketful of Azalea Fascination, a beautiful variety with rose-coloured flowers broadly edged with white, and richly spotted in the upper segments.

ROYAL HORTICULTURAL SOCIETY.

Dr. Masters devoted his concluding lecture on Saturday last, to the consideration of the Flower. After pointing out the various parts and remarking that some are useful for protection and others for attracting insects, he said that the numerous forms which the flower assumes may partly be explained on the same principles as those on which the leaves are arranged. If the parts of the flower are few and even in number, they are usually arranged in pairs crossing each other; but if they are many, or the number is odd, 3 or 5, the arrangement is spiral. Thus, as a rule, the organs are so placed as not to interfere with each other, and where this rule is departed from there is either a great disproportion in the size of the organs, or their direction is different.

After touching on the causes which lead to deviations from what may be taken as a standard of a perfect flower, in which all the parts are present, and which were explained by the union or suppression of parts, the disproportionate growth of some parts of the flower as contrasted with that of others, was referred to as a frequent cause of variation in the shape of flowers. With reference to double flowers their peculiarities were stated to be principally due to the substitution of petals for stamens and pistils, and to the multiplication of the numbers of parts. Thus, the lecturer remarked, while the general plan of construction in flowers is simple and uniform, great divergences in matters of detail are provided for with a view to the well-being of the individual plant, or of the community to which it belongs.

PRICE OF STRAWBERRIES.

I was surprised on referring to your list of prices of vegetables and fruit of April 24th, to see Strawberries quoted at 6*d.* to 1*s.* per oz., when it is a well-known fact that they have been selling at 5*s.* per oz. for some time.—A Constant Subscriber.

[Our quotations are correct, and have been since Strawberries came in; the retailers are buying them at 6*s.* to 10*s.* per lb., and selling them at 8*s.* to 16*s.* per lb., and will supply "A Constant Subscriber" with any quantity at those prices. We are sorry that country purchasers have been so victimised. —Eds.]

PARIS UNIVERSAL EXHIBITION.

We have not been unmindful of those portions of this Exhibition which are entitled to a notice in these pages, and we shall give of them a full report. At present we shall do no more than detail the awards of prizes to the second series of exhibitors from April 15th to April 30th. The third series commenced on the 1st inst.

GENERAL EXHIBITION OF CONIFERS.

Ornamental Conifers in pots, baskets, or planted out before March 31st

1. Collection of species and varieties.
   First prize, M. Deseine, Bougival. Second, MM. Defresne et fils, Vitry. Third, M. Oudin, Lisieux. Honourable mention, MM. Paillet fils, Chatenay; Croux et fils, Sceaux; Moreau, Fontenay.
2. Fifty out-door species and varieties.
   First prize, Messrs. Veitch & Sons, London. Second, M. Morlet, Avon, near Fontainebleau. Third, MM. Jamin et Durand, Bourg-la-Reine. Honourable mention, M. Rémont, Versailles.
3. Twelve distinct species remarkable for their selection and growth.
   Second prize, M. Charozé, à la Pyramide, Angers. Third, M. Alfroy neveu, Lieusaint (Seine-et-Marne). Honourable mention, M. Cochois.
4. Six specimens, different kinds, for the decoration of gardens.
   First prize, M. Cochet, Suisne. Second, M. Rémont, Versailles. Honourable mention, M. Alfroy-Duguet, Lieusaint (Seine-et-Marne).
5. The best single specimen.
   First prize, M. Cocher, for a Thuja gigantea. Second, Krelage et fils, Haarlem, for a Picea Nordmanniana. Third, M. Oudin, for a Picea pinsapo. Honourable mention, M. Alfroy neveu, for a Pinus Sabiniana.
6. Twenty-five different kinds of Abies remarkable for their growth and selection.
   Third prize, M. Paillet fils.
7. Recently introduced species.
   First prize, M. Adrien Sénéclauze, Bourg-Argental (Loire). Second, Messrs. Veitch & Sons. Third, MM Thibaut et Keteleer, Paris. Honourable mention, MM. Paillet fils, Paris; Oudin, Lisieux.
8. Collection of New Hardy Conifers not yet sent out.
   First prize, Messrs. Veitch & Sons. Third, M. Oudin. Honourable mention, M Adrien Sénéclauze.
9. Araucarias remarkable for their size.
   Third prize, M. Daudin, Pouilly, (Oise). Honourable mention, M Knight, Château de Pontchartrain (Seine-et-Oise).
10. Collection of Araucaria imbricata.
    Second prize, M. Oudin.

In what are termed the accessory classes the following awards were made:—

HOTHOUSE PLANTS.

1. Collection of twenty different plants in or out of flower.
   First prize, M. Chantin, Montrouge.
2. Collection of twelve plants remarkable for size and good cultivation.
   Third prize, M. Lassus, Paris.
3. Collection of six plants remarkable for size and good cultivation.
   First prize, M. A. Verschaffelt. Ghent.

CACTI.

1. Collection of species and varieties.
   First prize, M. Cels, Chaussée du Maine, Paris. Second, M. Pfersdorff, Avenue de Saint-Ouen, Paris. Third, M. Ramus.
2. Collection of twenty-five species.
   First prize, M. Pfersdorff.
3. Collection of twelve species.
   First prize, M. Ramus.
4. Species and varieties grafted.
   First prize, M. Pfersdorff.
5. Collection of twenty-five species or varieties, grafted or not, in flower.
   Third prize, M. Pfersdorff.
6. Species and varieties of Cereus.
   First prize, M. Cels.

SELAGINELLAS.

New species or varieties.
Second prize, Messrs. Veitch & Sons. Third, M. J. A. Willink, Amsterdam.

GREENHOUSE PLANTS.

Collection of species and varieties of Agave.
First prize, M. Cels. Second, M. Chantin.

Collection of select species of Agave.
First prize, M. J. Verschaffelt, Ghent.

Collection of Aloes.
Second prize, M. Pfersdorff.

Collections of Bonapartea, Dasylirion, and Littea.
First prize, M. J. Verschaffelt.

Collection of Greenhouse Yuccas.
Second prize, MM. Jamin et Durand.

Collections of Himalayan and Japanese Rhododendrons in flower.
Third prize, M. Knight.

Cinerarias in flower.
Second, prize, M. L'Huillier. Third, M. Bonatre, Neuilly.

Hyacinths, species and varieties in pots.
First prize, MM. Krelage et fils. Second, The Prussian Government. Third, M. Thibaut-Prudent, Paris. Honourable Mention, MM. Havart & Co., Paris.

Twenty-five varieties in pots.
First prize, MM. Krelage et fils.

Collections of Pansies.
Second prize, M. Falaise, aîné, Boulogne (Seine). Honourable Mention, M. Falaise (Edmond), Rue de Billancourt, Paris.

Collections of Roses.
First, M. Jamain (Hippolyte), Paris. Second, M. Margottin, Bourg-la-Reine.

New Plants.—Collection of seedlings.
Honourable Mention, M. Cocher, for Beschorneria multiflora.

Collections of Forced Vegetables.
First prize, Horticultural Society of Clermont (Oise).

Asparagus.
First prize, M. Louis Lhérault, Argenteuil.

Collection of Trained Fruit Trees.
First prize, M. Cochet, Suisne, for Palmette training. First, MM. Jamin et Durand, Bourg-la-Reine, for Pyramids. Second, MM. Croux et fils, Sceaux. Third, M. Deseine, Bongival. Honourable Mention, M. Defresne and M. Gilekains (Belgium).

Trained Peach trees.
First prize, M. Chevalier, Montreuil. Honourable Mention, M. Gilekains.

Cherry, Apricot, and Plum trees trained in different ways.
Honourable mention, M. Croux.

Four Apricot trees trained for walls and espaliers.
Third prize, MM. Jamin et Durand.

Four Plum trees trained for walls and espaliers.
Honourable mention, MM. Jamin et Durand.

Vines.
Honourable mention, M. Rose Charmeux, Thomery.

ASSISTANTS.
First prize, M. Forest, for the training of the trees exhibited by M. Cochet.

INSIDE VINE BORDERS.

There has been some pleasant controversy in your columns about Vine borders, some of your correspondents advocating inside borders, and some the converse. I am not a grand Grape-grower, showing for prizes, but I delight in Vine culture in my small cottage way, not caring for large bunches, but having a great relish for Grapes of fine flavour.

I have what is called a vineyard under glass, which to me is a great source of delight. It is a small span-roofed house, 20 feet long, and 14 feet wide; there is a path in the centre, and a border on each side. In each border I have fifteen Vines, trained to upright rods and spurred in. This is the third year of their growth, and nearly every Vine is showing abundance of fruit, three or four times more than they must be allowed to ripen.

I happened to be in my house on this sunny day (April 29th)—a rare thing this spring, and on observing the vigorous shoots my Vines are making, with their roots in my inside borders, and the comparatively backward state of some Vines with their roots in a border outside, sloping to the south-west, in a dry sandy soil, I was induced to sink two thermometers in the borders about 8 inches in depth. I allowed them to remain there, well covered with earth, to an exact level with the surface of each border, from 11 A.M. to 2 P.M. On taking them out I found that which had been buried in the inside border standing at 62°, and that from the border outside, only 18 feet from the inside border, standing at 51°, giving a temperature 11° below that of my inside border. Please to tell me if I am right in considering a warm border better than a cold one for the roots for Vines.—A Young Vine-grower.

SORGHUM TARTARICUM.

It is with much regret I note in your Journal of April 25th the remarks respecting this new cereal; for, relying on Messrs. Carter & Co.'s advertisement, I have not only planted a quantity of it myself, but many friends, to whom I recommended it, have also been to the same expense and trouble; and now our seed is but scarcely in the ground, when you inform us that it is an old failure under a different name, and that it will never be of any service in this country. That Messrs. Carter must have been deceived is very evident, and it is fortunate they are so well known as an honourable and respectable firm, but if the statement in your Journal is correct, some explanation is surely due from them concerning it.—W. P., *Cadbury*.

ORCHARD-HOUSE MANAGEMENT—WATERING.

AN EXAMPLE FOR AMATEUR GARDENERS.

I take a great interest in my orchard-house. It is a span-roof built of wood and glass after Mr. Rivers's plan, and I have put a four-inch pipe round it; it is 42 feet long by 14 wide. I am in a peculiarly cold and backward climate, and wish to push the trees a little. My present system is to keep the ventilators at the two ends of the roof open day and night. I open all the side ventilators at eight o'clock, unless the wind is rough or cold, when I keep the shutters closed, or nearly so, on the side towards the wind. I keep the pipes warm day and night, and shut up the house, except the two top ventilators, at three o'clock, when I syringe. At present the trees look as well as they possibly can, and the fruit is set beautifully. My doubt is whether I do not waste heat by giving so much air. I wish for information how to manage the house from this time till the fruit is ripe, so that I may have the crop as forward as is safe.

I often hear persons, especially gardeners, rail at orchard-houses, and I observe one great point with them all is the trouble of watering, supposing the trees to be in pots as mine are. I think this objection has not been met in your pages with the very sufficient answer "that such trouble as that of watering the tree is not skilled labour." My "head man" is not sixteen years old, and he is perfectly competent to water the trees—the pruning, &c., being a pleasure to myself. I think it worth while, then, to try to prevent persons from being discouraged by gardeners who, very probably, can make a Peach-house with trellis answer better than an orchard-house; but with a large proportion of amateur gardeners there is the skill and willingness to do the light and easy work of the orchard-house, while the heavier work may be done by a boy; the regular reach house, on the other hand, requires the eye and hand of a trained gardener.

I have but little time for gardening myself; but I have five houses heated—all, of course, small; and with the occasional help of a labourer, say three days a-week, from April 1st to September 30th, and my superintendence, my sixteen-year-old man manages the whole, and about two acres of garden and lawn. My houses, sheds, soil, water-tank, &c., are placed close together. My walks are edged with tiles, so that salt keeps them clean. My lawn is mown with a machine, and my wall trees and pot trees I prune and nail myself; and I believe my garden bears comparison with many where the expense in labour is threefold.—C. P.

[High praise is your due for keeping your garden and houses with such a small amount of labour, but as you do so much yourself *con amore*, your case could hardly be cited as applicable to those places where little is done either with the eye or the hands of the proprietor, except to make work instead of lessen work for others to do.

Even though the watering of orchard-house trees in pots can be done by unskilled labour, yet that labour, and especially if water is scarce and has to be brought in pails or barrows from a distance, becomes a serious item, and more especially when houses, water, &c., are not placed so near together as yours are. A proprietor, and an amateur who is one, can arrange these things to suit best and thus save labour; but many gardeners find it difficult to get a shilling spent in these directions, even

though the spending of the shilling would, ere long, save pounds. We could name many places where in the way of watering alone labour would be greatly lessened by the expense of pipes for carrying the water where it is most needed. In fact, our experience would say, If you wish to see improvements go to an enthusiastic amateur. He will not scruple to lay out a little money which will insure a constant saving afterwards. With all these allowances, however, we consider that your management, with the head man of sixteen years old, and an occasional labourer, is highly meritorious. Gardeners as a body are well aware of the interest and variety to be obtained in orchard houses.

Your house, however, is hardly an orchard-house, further than its first cheap erection, as your hot-water pipes give you all the advantages of a Peach-house or a vinery. We quite agree with you, that, having that piping, you should bring in the fruit earlier, and this you can do by having less air, but taking care that the house do not become too hot by sun heat. As the season advances you will want all the air at midday in bright weather, but you can do much by giving only a little in the morning, and shutting up early. Mr. Rivers regulates his side ventilation by having gauze or thick netting inside of the ventilators. By two tacks and a looped string we can open ours a couple of inches or less, onwards to a full opening, and provided a little air is given early, that will do for moderate days, and more must be added if the sun is powerful. Provided air is given early, the house may range with sun heat from 70° to 90°, but rather below 90° than above it. From 50° to 60° at night. See Doings of Last Week.]

PEACHES AND NECTARINES IN AN ORCHARD HOUSE.

I HAVE a small lean-to house, 16 feet long by 9 feet wide, which has a south aspect, and is heated by a flue from another house, running through it about 12 inches from the back wall. There is room for an inside border, about 5 or 6 feet wide. The roof is a little flatter than 45°. Would this be a good place for a Peach tree trained up the glass? The house could be emptied in a month's time, and as I have two trees (a Peach and Nectarine), very suitable in size, and about four years old, I should be glad to know if they could be moved into the house when the border is completed—say in six weeks' time. They are now planted against a low wall, but in an unfavourable situation for ripening their wood properly. Being anxious to have a little fruit next year, I should like to know in the first place if the house would be really suitable for growing those fruits; and, in the second place, if moving the trees in full leaf would be better than leaving them as they are till October, and then bringing them into the house with plenty of soil.—A. R. L.

[The Peach and Nectarine trees will do admirably in the border inside the house; but you must not think of moving them in six weeks. Let them alone until towards the end of September or the beginning of October. By moving early and carefully in autumn you will be sure of a crop in the following year. You may grow something else in the border in summer, as Cucumbers or Melons.]

A WORTHY EXAMPLE.

I AM a small freeholder residing about a mile south of Christchurch, near Canterbury, in New Zealand, and until about two years and a half ago was totally unacquainted with gardening either as to its science or practice; but being driven by stern necessity, I arrived at the conclusion that nothing short of two very important branches of horticulture would be likely to set me right, and these were the culture of the Cucumber and that of the Grape.

How was I to surmount my difficulties? I was not only out of work, but was greatly in debt, and yet both of these productions required glass structures.

Neither in theory nor practice did I know anything of the culture of either; but, nndespairing, by one honest means and another I obtained both wood and waste glass, that enabled me to construct a house such as I most fancied, and from which ultimately through hard struggling and perseverance I was enabled to obtain a fair crop of Cucumbers in the first season. By the aid of Mr. W. Thomson's "Treatise on the Grape Vine" I likewise obtained, in the same season, good growths from my young Vines, which enabled me, in the February of the following year (1866), to carry off the palm at our Christchurch horticultural show with beautiful bunches of Black Hamburgh Grapes, each weighing upwards of 1¾ lbs., from my year-old Vines.

I likewise constructed 74 feet run of Cucumber-frames, walls of mud or cob, which I took great pains with, and I finally succeeded in obtaining both glass and wood, as well as stable-manure for hotbeds. I am happy to inform you that last season I cut not less than 2600 Cucumbers, which I sold for no less than £99; and that again enabled me last winter to construct a large vinery 40 feet long by 28 feet wide, and with a span roof, and six-feet walls of glass all round. This I intend to be a vineyard under glass; and I have filled all under it with as good a three-foot border as I could, to about 3 feet all round the outside. To this I shall add, as the Vines advance. The house itself rests on charred, stout wooden piles, resting on the firm ground beneath. The Vines I think of training horizontally on trellises in the body of the house, leaving the roof clear; they are chiefly Black Hamburgh, but I think there is heat enough for a Muscat.

I have planted 180 young Vines struck from eyes this spring, and I think I have no cause to grumble, though they are not making that headway which I had expected, but it was late in the season when I had the house ready for them, and Christmas had arrived before I had them planted; but more of this some other time.

I wish now to ask you to inform me why some of my most prolific Cucumbers prove bitter oftener than others—in fact, they are the only ones which prove bitter. Do you think it arises from the plants, the mode of training, or the lack of saline matters in the manure? I have hitherto trained my Cucumber vines on the soil, inside the frames, pegging down the branches where they have rooted, and I imagine this has greatly assisted the plants. Last year I followed the same practice, and cut Cucumbers from the same vines for six months, from the 1st of December to June, and all through the season I never heard of more than six or eight bitter fruit. This season the seeds which I was most anxious to obtain not having arrived from England, I was obliged to do the best I could with what seeds I could procure, and the result was some proved very prolific, but with a great tendency to be bitter. The sun being very powerful here during the middle of the day, with strong north-west parching winds, I have often made it a practice to shade with canvas, and shut up closely during the heat of the day, and the thermometer in the frames has often risen to 100° during such times. I have likewise often watered the beds with liquid manure, but sprinkling the foliage with clean water. I always use water of the same temperature as that of the frames.—THOMAS LORD.

[Our correspondent is a member of Nature's peerage—a true "lord"—one of those who are the conquerors, not the slaves of circumstances. We hope often, and for many years, to receive the reports of his well-doing. We have done all that he asked us to do in a postscript not needing publication, and we now answer his query. Bitterness is always present in the stalk-end of the Cucumber, being the part least ripened. When it first occurred in our own practice we concluded that the sap supplied to the fruit was not sufficiently elaborated, so we increased the temperature of the bed, allowed a freer exposure to the light, and admitted air more liberally, both during the night and the day. We had no more bitter Cucumbers.]

NEW BOOKS.

A Handy Book of Meteorology. By ALEXANDER BUCHAN, M.A., &c. W. Blackwood & Sons, Edinburgh and London.

WHEN we opened this pocket volume the first sentence we read was—"The truth is, no prediction of the weather can be made, at least in the British Islands, for more than three, or perhaps only two, days beforehand; and any attempt at a longer prediction is illusory," and we promptly concluded that it is an honest book. Little did we think, however, that we should thoroughly read its pages, but we did, and have placed it in the row of authorities on our table, ready for reference; for it is, most truly, what it is designated, "A Handy Book." It is one of those books, too few in number, which contain nothing but what is desirable to be in its pages, and all is told clearly and pleasantly, as no one can narrate except a writer who is thoroughly master of his subject. We have not often

the pleasure of speaking thus of a publication, and every reader of the volume will assent to our opinion of its merits.

We recommend it especially to our gardening friends, not as a foreteller of weather, but as an explainer of many of their operations, and as a guide to much information which they are continually needing. Thus, there are isothermal maps, showing at a glance the temperatures of the air and soil to which a plant is accustomed of which they know the native place. Every chapter, however, contains explanations and facts, enabling the gardener thoroughly to comprehend the reasons for many operations which he has been taught to adopt, and so to comprehend them constitutes enlightened practice. We have many passages marked which deserve extract, but we must be content with the following:—

"*Radiation from the Earth.*—The degree to which the temperature falls depends on the radiating and conducting powers of the surface over which the thermometer is placed, being greater as the radiating power is greater, and the conducting power less, and *vice versa*.

"One of the most instructive examples illustrative of this subject that could be given, is the result of Mr. Glaisher's observations on the different temperatures of long and short grass. A thermometer placed on long grass was found to be on a mean 1.1° lower than one on short grass, whilst the temperature of the soil under long grass was 1.1° higher than under short grass. The temperature was thus the same amount in excess under the long grass, as it was in defect over it. Hence the difference of temperature over the long and the short grass was entirely due to the greater quantity of heat conducted from the soil to the top of the short grass, over that conducted to the top of the long grass, and not to any difference in the radiating powers of the grasses. The experiments were extended, and it was found that the temperature varied with every variation of length, fineness, and closeness of texture of the blades of the grass."

"*Dew-point.*—The ascertaining of the dew-point is of great practical importance, particularly to horticulturists, since it shows the point near which the descent of the temperature of the air will be arrested during the night. For when the air has been cooled down by radiation to this point, dew is deposited, and latent heat given out. The amount of heat thus set free being great, the temperature of the air is immediately raised. But as the cooling by radiation proceeds, the air again falls to, or slightly under, the dew-point; dew is now again deposited, heat liberated, and the temperature raised. The same process continues to be repeated, and thus the temperature of the air in contact with plants and other radiating surfaces may be considered as gently oscillating about the dew-point. For if it rises higher, the loss of heat by radiation speedily lowers it, and if it falls lower by ever so little, the liberation of heat as the vapour is condensed into dew as speedily raises it. Thus, then, the dew-point determines the minimum temperature of the night.

"This suggests an important practical use of the hygrometer. If the dew-point is ascertained by it, the approach of low temperatures or of frost may be foreseen and provided against. Thus, suppose on a fine clear spring day, towards evening, that the dry bulb was 50°, and the wet 40°; the dew-point at the time is, therefore, 29.4°. Frost on the ground may then be predicted with certainty, and no time ought to be lost in protecting such tender plants as may be exposed in the open air at that season. If, on the other hand, with a sky quite as clear, the dry bulb was 50°, and the wet 47°; the dew-point being thus 43.8°, no frost need be apprehended. The raising or depressing of the dew point during the night by a change of wind, is the only circumstance that can happen to interfere with the predictions founded on the hygrometer."

A Practical Treatise on the Hybridisation and Cultivation of the Tricolor Pelargoniums. By Thomas Dixon, Gardener to W. Blinkhorn, Esq., Waterdale, Sutton, St. Helens.

The title-page tells the truth—this *is* a trustworthy, practical treatise, and we recommend every one who desires to raise new varieties of these Pelargoniums, to send thirteen postage stamps to Mr. Dixon, for a copy. We say "every one," because the directions are so full, and so explicit, that the most inexperienced will readily understand how to proceed. There are ample instructions arranged under the following heads:—

"1st, To secure the most suitable varieties for parent plants.

"2nd, That they should not be in an exhausted state for want of rest.

"3rd, That the plants should not be grown too luxuriantly by applying stimulating manures.

"4th, That the atmosphere of the house be dryish when the anthers open, so that the pollen will not be caked together, and unfit to apply to the stigma.

"5th, That the seeds be kept neither too wet nor too dry in the seed-pan.

"6th, That the young seedlings get strong before potting from the seed-pan.

"7th, That they do not damp off from being over-watered, kept too close, or for want of heat, after they are potted from the seed-pan.

"8th, That the plants for hybridising be put under growing treatment not later than the latter end of February, or the beginning of March, better sooner than later; in fact, any time after the middle of January."

NOTES AND GLEANINGS.

Her Majesty has signified her intention of laying the first stone of the Hall of Arts and Sciences on Monday, the 20th of May. The contractors for the building, Messrs. Lucas Brothers, are busily engaged in making preparations for the ceremony. The ground is being excavated some feet in depth, so as to mark out the amphitheatrical form of the building, and the excavation will be covered in with canvas to protect the spectators of the ceremony from every contingency of weather.

—— It is our painful duty to announce the death of the Rev. George Cheere, of Papworth Hall, St. Ives, Huntingdonshire, which took place on the 10th of April. The deceased gentleman was a member of the Floral Committee of the Royal Horticultural Society, as well as one of the Vice-Presidents of the International Horticultural Exhibition, and took a great interest in horticulture, being himself an occasional exhibitor. We last saw him, then apparently in full health and vigour, at the Floral Committee meeting on the 6th of March, where he had six pots of Mignonette, which were the admiration of every one; and on several other occasions he exhibited remarkably fine Anne Boleyn Pinks.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, in cutting, all the first shoots should be taken. If one or two of the strongest stems are allowed to run up, the other shoots from the same crown are placed at great disadvantage; but ultimately some good shoots, but none of the very small ones, should be left to grow up. Where common salt has been employed as manure, the Asparagus will be found earlier and better; the cutting, however, ought not to be continued in this case so late as is usually done under ordinary circumstances. *Broccoli*, make a principal sowing of all the late and spring sorts, such as Portsmouth, Sulphur, Dwarf Late White, Knight's Protecting, Clarke's Early White, Walcheren, and Somers' Particular Late White; the latter will form the last link between the late spring Broccoli and the hand-glass Cauliflowers. Sow *Chervil*, *Chicory*, and a bed of *Sweet Marjoram* on a warm slope—this plant is much hardier than Basil, and will do very well in this way; also, *Carrots* for drawing young, *German Greens*, *Savoys*, *Radishes*, *Lettuces*, and successions of *Peas* and *Beans*.

FRUIT GARDEN.

It may be observed that portions of shoots of Apricots which had been surrounded by the shreds in the preceding summer have been more injured by the frost than the adjoining portions. The shreds employed for fastening the summer shoots should, therefore, be of good quality, in order that very narrow strips may suffice, and no more should be employed than is absolutely required. Plenty of room should be allowed, and the leaves should hang free, and not be bundled along with the shoots. Walls are expensive, and every gardener ought to keep a good face upon them as long as possible, by not driving nails farther in than is necessary. For summer nailing it will generally be sufficient that merely the point of the nail be inserted, just enough to hold, but rarely farther than would render difficult its removal by the finger and thumb. With regard to driving nails in the face of the brick, that is quite inexcusable. Water effectually all trees that require it. If only a little rain fall, insufficient to reach the roots, so much the more will the trees suffer on the return of dry weather, an expanded foliage being induced, requiring an increased supply of moisture which the roots are not in a condition to give, if judicious watering be not attended to.

FLOWER GARDEN.

Of course, manuring and dressing will proceed in an orderly way. High-dressed ground should be mowed at least once a-week at this period, for a well-kept lawn is a most pleasing object. Let the dressing of all herbaceous or mixed beds and borders be finished without delay, and prepare stations where blanks exist to receive Verbenas, Fuchsias, Heliotropes, Calceolarias, &c., now in the course of hardening off for this purpose, and for forming masses. Self-sown annuals, the Mimulus family, the

Forget-me-not, and other useful little flowers, as also Pansies, may be transferred with balls, to fill up blanks. See that runners of the Neapolitan Violet are provided for the next winter. Many excellent herbaceous plants have been lost or rejected to make way for novelties. Auriculas are now in full flower, and in order to prolong the bloom it will be necessary to remove them from the frames to a north-east or northern aspect, protecting them from rain by an awning of calico. When seed of fine quality is a desideratum, artificial impregnation may be resorted to. As seedlings attain a sufficient size to handle, prick them out into store-pans. If Polyanthuses are grown in beds and are intended for exhibition, the plants should be lifted with a ball of soil and potted overnight, at the same time watering well; they may be returned to their places after the competition is over, sustaining little or no injury by the removal. Tulips are now colouring fast and when sufficiently forward should be partially shaded, and especially protected from hail storms, which usually occur at this time. Support those requiring it with neat sticks, and keep the bed free from weeds. Insert the whole of the sticks intended for the support of the flower-stems of Carnations. Late-planted layers must be carefully attended to. If the beds of Pinks are not already top-dressed let it be done without delay. Continue to pot-off rooted cuttings of Dahlias, and harden those already potted. Pansies may now be readily propagated by the small side-shoots. Prick them out under a hand-glass on a shady border.

GREENHOUSE AND CONSERVATORY.

No tribe of plants is better adapted to keep up a constant display than Azaleas. The numerous varieties of Azalea indica are remarkable for brilliancy, whilst the hardy American species delight with their agreeable fragrance. The principles followed with regard to the Camellia to produce winter flowers, are in the main applicable to the Azalea indica. Forcing into wood betimes in the spring, a trifling amount of check to form the bud, and a partial rest for a considerable time before excitement, are the main features. The Azalea, however, will do with more heat than the Camellia, and with rather less shading. Plants intended for flowering next January and February should be forced into growth without delay. The early-flowering plants of Primula sinensis, now exhausted, should be removed to a cold pit or frame; likewise early-bloomed Cinerarias or other fading stock. It is of the utmost importance to have a pit or frame for this purpose, as it enables the cultivator to thin out the remaining stock now in rapid growth. Pelargoniums will now be making rapid progress, and the early plants will now be coming into flower. Attend to tying them neatly, and never allow them to suffer for want of water, and even a little manure water will benefit them. Keep the foliage free from dust, by syringing and washing, in order that the leaves and flowers may be shown to the best advantage.

STOVE.

Attend to shifting all the free-growing plants, which will now be making great progress, such as Clerodendrons, Gloxinias, Gesneras, and similar showy kinds which contribute to the decoration of the stoves and even greenhouses in summer and autumn. The great art in cultivating these plants is never to allow them to flag for a moment, but to keep them in rapid growth by an abundant supply of heat and moisture, and occasional shading in scorching sunshine, until their flowers appear: they may then be gradually exposed to more air and a lower temperature. Follow up frequent syringing to stove plants in general morning and evening. Do not suffer plants to become crowded, or weakness will be the certain result. If any room can be spared in the other plant-structures, a few of the commoner or hardier kinds should be removed. Continue to increase the temperature gradually, more especially when it can be done by solar heat, accompanied by a very considerable amount of atmospheric moisture. This will be best accomplished from three in the afternoon till six, when the thermometer may sink to 65° for the night.

PITS AND FRAMES.

Annuals that were sown last month will now require to be potted off. German Asters, &c., might be pricked-out in beds, under mats supported by hoops, previous to transplanting. Stocks and other annuals might be pricked out in the same way. Pot-off tender annuals, with Convolvulus major and minor, into pots, and protect them under glass until all danger from frost is over. Tender plants that were potted off early should be shifted if they require it; for if they get pot-bound before being planted-out they seldom succeed so well afterwards. Continue to increase the stock of Verbenas, Heliotropes, Salvias, Fuchsias, and all similar plants that may be required for filling boxes, vases, and blanks in the beds or borders in June.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Slugs and Snails.—The weather has brought out these from their lurking-holes in vast numbers. A hard, black-backed, yellow-bellied kind, which nothing will settle but catching and killing, has been holding high-festival peregrinations on the hardest walks of the kitchen garden, and the quickest and best way to destroy them is to pick them up on a dewy or damp warm morning, and dispose of them according to fancy and taste. If not sharply looked after, the common slugs and black and striped snails would soon make short work of all crops of Lettuce, Turnips, &c., just as they come through the ground. Where there is reason to suspect that they abound in the soil, a sprinkling of salt scattered over the ground about three weeks before sowing is good. In such moist weather, when slugs will be sure to attack young seedlings, a slight dusting of powdered quicklime will be a good protection, so long as the lime remains quick; but when by exposure it becomes mild, or chalk, it offers no more inconvenience to their moist bodies than so much soil. When thrown on the young plants, and the lime is very fresh, it is as well to mix it with equal parts of burnt earth, wood ashes from the men's fire-place, or roughish coal ashes from which the dust and the larger pieces are excluded. Finely-sifted ashes are of no use, but if the ashes are somewhat rough, ranging chiefly from the size of Radish seeds to that of the smallest Peas, the rough angularities of the ashes will distress the slugs very much; and even such will be more efficacious if a little fresh soot is added, one advantage of which is, that whilst the ammonia it holds is distasteful to the depredators, there is not a crop out of doors that will not be the better of all such dressings with soot, and for the manuring process it should be applied like guano just before rain is expected. For keeping off slugs and snails, the longer the soot remains dry the better. Where labour can be spared, there is nothing so effectual for keeping such slimy enemies as slugs and snails at bay as picking them up early in the morning, and this will be much facilitated if little mounds of brewers' grains or greased Cabbage leaves are laid down the evening before. These, however, should be examined early, if before daybreak all the better, and a sharp boy paid for the work is the best for the purpose.

Cucumbers.—The brighter weather and the smoking seem to have arrested the fly, and the production is everything that could be wished. In the frames snails have been more than usually troublesome; and in some small pots, with a bit of Potato or Carrot in them, and covered with dry hay, we have caught a good many, though very few woodlice, for which we had set the traps, and that in circumstances where we would have expected to find them, as it is almost impossible for an old garden to be free from them, especially when fermenting material is used for forcing. Potted-off plants intended for ridges and pickling, and put them under glass, where there was just a little heat. We have tried these hardier plants many ways, but, except in warm seasons, we could not do much with them on the plan followed at Maldon, Sandy, and Biggleswade, from which places so many Gherkins and short Cucumbers for salad find their way to the London market, and prove a very profitable crop. There the growers generally sow them in rows, some 4 feet apart, like Peas, but shallow, in the first fortnight of May: and all they do to them in a good season is to thin them out like Turnips, let them grow as they like, and gather the fruit. One of the oldest and best plans we have followed in cold places is to make a ridge of fermenting material from 2½ to 3 feet in height and 4 feet wide, place 10 or 12 inches of soil on it, plant under hand-lights, remove them when the plants are established, and let the plants run over and down the sides of the ridges, and almost as far as they like. If such ridges can be formed in the first week in May it is best to sow four or five seeds under each hand-light, as the plants then sustain no check. The next best method is to dig a trench 18 inches deep, fill with hot dung a little higher, and then throw back the most of the soil. The advantage of the first mode, where the ridge is all above ground, is, that in a wet autumn the plants will suffer little from the damp. The third best plan, where the open ground is resorted to, is to dig holes—say 4 or 5 feet apart, and put a good

barrow-load or more of hot dung in the hole before replacing the soil.

Vegetable Marrow.—After trying almost all the warted, and wrinkled sorts of Vegetable Marrow, we have gone back to the old common sort, long-shaped, and yellow when ripe. No other of the family, nor of the whole group of Gourds, beats it for richness of flavour, according to our fancy. Treat as ridge Cucumbers.

Sea-kale.—A correspondent writes that he is obliged for the rough modes of obtaining supplies of this delicious vegetable, which were lately described, but he cannot perceive the use of his placing dry litter or rough hay inside a garden-pot before placing it over the plants to be blanched; nor yet do we, as he covers the outside of the pot with litter. (See page 299 for reasons.) All we can say is, that we never cut finer or whiter. We are, however, obliged for the criticism, as it enables us to advise that in planting in rows 2 feet apart, the plants should not be less than 12 inches apart in the row, instead of 6 or 8 inches as stated in the page referred to, and that more especially, if the plants are to have two summers' growth before being taken up for forcing. We have just examined a piece so planted two years ago, and with small seedling plants. Each of these yielded a good head in the following spring. The cutting-off the crown or strong shoot caused a number of buds to sprout instead of die; and even though these were thinned, we find that the plants now are meeting each other in the row, and will be excellent for taking up for forcing next season, and thus we shall avoid all trouble with fermenting material on the beds.

The sight of these rows brought to our mind another simple mode of obtaining fine clean Sea-kale out of doors in spring without fermenting material—viz., the having triangular wooden boxes, something of the make of Mr. Rivers's curate's vinery—say 20 inches at the open base and 15 inches high at the ridge, the two sloping sides formed of stout wood tongued together, each piece to be from 4 to 6 feet in length. One side might be hinged to the ridge-board, so that the crop could be gathered without trouble. The chief objection to such boxes would be their expense, and principally on account of the strength of the wood, as, if the boards were thin, they would gape and shrink when exposed to a hot sun, and thus the light would find its way in and spoil the blanching. We once tried a lot of small oyster-barrels reversed over the crowns, and if these barrels had been covered with litter, they would have done as well, and been more safe, than regular Sea-kale earthenware pots; but when exposed to the sun they were of little use, as there were soon plenty of small openings between the staves.

Another correspondent is afraid if he covered his bed with fermenting material and tree leaves, without any pots or boxes over the beds, that the growth would become drawn up and be spoiled in flavour. We agree that rank fermenting dung would be apt to injure the flavour; but fresh tree leaves will afford ample heat, and the shoots of the Sea-kale as it rises through them will be little if at all injured in flavour. As for spindling, however caused, the produce will be watery if the heads are much more than 6 inches in length. This length may be considered a good average. If less than that, and strong and sturdy, from 1 to 1½ or 2 inches in diameter at the base, all the richer and better the flavour. In planting the fresh piece referred to last week, we put the plants out 1 foot apart, in rows 2 feet from row to row.

After such statements, we think that the smallest garden may have its little plot of Sea-kale, as well as its piece of Rhubarb and Parsley. We shall have sown what Sea-kale seed we have before this is printed, and fly and birds must be looked after, or they will make short work of the first of the young plants, and the last of the seeds, just as they begin to germinate. Wood ashes, &c., and a net will be required where birds are troublesome.

Asparagus.—We shall sow seeds, and plant out a piece at once. As a fact in favour of planting in rows instead of beds, and as it were on the crown of the ridge, and thus keeping the plants all along comparatively near the surface, we may mention that we gathered plentifully a week ago from such a piece, whilst scarcely a shoot appeared on a piece intended for forcing next year, and which had been planted more in the bed and covered deeper. Those who can spare a little dung for surface-manuring every year, may have good serviceable Asparagus without what so many dread—the burying of large quantities of manure in the soil at great depths, and making more ado with an Asparagus-bed than if it were a Vine border to last a century. In all cold clayey loamy soils, however, if the largest heads are to be aimed at, draining and deep stirring must be practised, and light soil must be procured to imitate the deep rich sandy loams in which the Asparagus naturally flourishes.

Scattered salt twice between the rows, and did the same to the fresh-planted Sea-kale. Will cut as little as possible from the old piece of Asparagus referred to above, but will pretty well allow all to come, and then the buds will be sooner matured, and therefore more obedient to heat when applied at the end of autumn. In making fresh plantations we prefer two-year-old plants, and those one year old to those which are more than two years. As stated the other week, we like the plants to be 3 inches or so in height, and as the roots are spread out they should never be dry, but be kept in a damp mat whilst planting goes on.

Turnips.—From a bed sown under a glass protection we have thinned out the most sturdy plants, and transferred them to a south border, pricking them out in rows 15 inches apart, and 6 inches in the row. This is a good mode of obtaining early Turnips easily, as the plants are beyond the reach of the fly, and it would require some large snails to crop them over. We find the common Turnips for table transplant as well as the Swedes.

Pursued the routine of pricking-out Celery and Cauliflower; the advantage of doing so with the latter is that the plants are strong before being finally planted out with a trowel, and thus are better able to bid defiance to all enemies.

FRUIT DEPARTMENT.

The chief work has been thinning Grapes, arranging Vines, and thinning shoots in the late vinery and orchard-house, removing Strawberry plants and introducing fresh, and as soon as we can find time we shall throw up a slight hotbed, as alluded to last week, lift a lot of young plants pricked out on a border last autumn, and cover the bed with old sashes. Our doing so will free the houses after a time of Strawberries, and keep up the succession until they come in from out of doors, but which we do not expect them to do for six weeks.

Orchard-houses.—Strawberry plants in the first orchard-house are in full bloom, and in the second are but little more forward than those out of doors. In the first Tom Thumb Pea is podding well in a row of pots at the foot of the back wall, whilst Dillistone's, or a sort very much like it, sown within a yard of the first, and allowed to cover the ground behind two rows of Strawberries in pots, is in full bloom, and will no doubt do well. In the second house buds are forming on a similar row of Peas, but we expect the first week of May will be gone before many flowers show or open, and the present appearance would lead us to the conclusion that they would not be more than a week or ten days in advance of those turned out in the open border. The latter house, on account of Plums and Cherries in pots, has been kept very open, and only shut on cold nights, or in very high winds. The Peaches against the north wall have set very thickly, and we have disbudded twice; and the Cherries are setting, and neither they nor Apricots will set without plenty of air. The first house contains chiefly Peach and Nectarine trees against the back wall, Peach and Fig trees in pots in front, and Vines planted near the front inside, and for which, if we keep them, we must make a border outside beneath the walk which runs in front of them, and they well deserve it, if the pot plants should be removed. This house had less air, even when the trees were in bloom, though a regular circulation; and as the fruit set sooner, the house was kept warmer by giving only a little air early and not the full quantity even in sunshine, except when very bright, shutting up between three and four o'clock in the afternoon, and if cloudy even earlier than that. In cold weather, we put a fire in the iron stove in the house, and though it is a rough, tinkered-up affair, nothing could answer better, and for such a purpose no other plan of securing a regular genial heat will come near it for economy and simplicity. By this means the house, except in cold nights, will now average from 50° to 55° at night, and from 60° to 65° in dull days, and provided air, however little, is given early, we do not mind if the temperature rises gradually to from 75° to 85° with sun heat; but if likely to go higher at this season, we add a little more air, chiefly at the top of the house. Of course, as the sun gains power by-and-by, all the air possible will be needed at mid-day. By such modes the one house will be pretty well cleared before the other comes on.

We are not surprised that orchard-houses are such a source of pleasure and profit to amateurs, for even the watering and other attention bestowed on trees in pots, which become a drag to the gardener, are to amateurs sources of interest and healthy

enjoyment. A visitor lately wished we would say how this house was filled up, though it does not furnish any rare example of the cramming system at this season. The house is a lean-to, height at back, 10½ feet; in front, 3½ feet; the front supported by wooden posts, and consisting of 12 inches of glass, all wood below; wooden ventilators, hinged. Sixteen inches from the back wall is a trellised wooden pathway, 16 inches wide, and in front are two rows of trees in pots, and sometimes more. In front of the pathway in winter, Lettuces, Endive, &c., were put, and Strawberries in pots were kept secure. Between the pathway and the first row of trees, Potatoes in pots were brought from a bed as soon as the temperature in the house rendered it safe, and these, after being fingered for the earliest tubers, are now taken out and placed under some Spruce trees that have no branches within 6 feet of the ground, and where they will have a fair portion of sun without being liable to frosts, as some Laurel branches have been stuck in behind them to break the north winds; thus placed they will yet afford good gatherings. Between the wall and the pathway there is the row of pots of Tom Thumb Pea. Close to the front there are two rows of Strawberries in pots, the one row standing 4 inches above, and the other on a layer of turf. About 3 feet from the front is the row of Peas with a line of twigs behind them to prevent them going back, and so forcing them to go to the front along the ground, which causes all the blossoms to stand upright, and the pods too are easily seen. Between the Peas and the Strawberries, until lately, there was a row of Kidney Beans in 10-inch pots; but the Peas, as they grew, required that they should be removed to a late vinery, which we could not keep longer without shutting it up. From these Peas back to the wooden pathway, wherever there was a vacant space among the pots, it has been filled with bedding plants requiring to be pushed on a little before being thoroughly hardened off, so that the 16 inches of pathway is at present the only empty space in the house, and the only drawback is that ladies can scarcely venture along with their ample garments.

Before filling the centre of the house with these temporary inmates in the shape of bedding plants, &c., the ground for the front half of the house was well watered with liquid manure, as in such a house we prefer watering at two or three times, beginning at the back wall first, and with intervals of some days between them. In this house we discovered on four or five twigs our old enemy Aphis persicæ, and either removed them or washed with soap water and quassia water with a brush; and as yet we have seen no trace of other insects. After shutting up in the afternoon, and especially if sunny, we frequently syringe with weak soot water, as clear and bright as coloured brandy. When we shall have taken the bedding plants and the Peas out, we shall have little on the floor during the summer, and then where the trees do not shade, the sun's rays will have the chance of reaching the ground—a matter of more importance than is generally imagined. This is merely a slight sketch of what an amateur might obtain from such a house and yet keep it at all times neat and interesting.

ORNAMENTAL DEPARTMENT.

The work was chiefly a repetition of that of previous weeks—potting, pricking out, and cutting-making. We were very much hindered in putting Calceolarias into temporary beds on account of these beds having been soaked with rain, and we dislike planting in such wet soil.—R. F.

COVENT GARDEN MARKET.—May 1.

We have again to report a downward tendency in the prices here, owing to the supply now considerably exceeding the demand in forced fruit; and foreign importations have very much increased, comprising Potatoes, Kidney Beans, Artichokes, Tomatoes, Asparagus, Salading, Cherries, and Apricots.

FRUIT.

	s.	d.	s.	d		s.	d.	s.	d
Apples ..... ½ sieve	2	0	to 3	0	Melons..... each	0	0	to 0	0
Apricots ..... doz	0	0	0	0	Nectarines ..... doz.	0	0	0	0
Cherries ..... hox	3	6	5	0	Oranges 100	5	0	10	0
Chestnuts ..... bush.	0	0	0	0	Peaches..... doz.	0	0	0	0
Currants..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	0	0	0	0
Black ..... do.	0	0	0	0	kitchen..... doz.	2	0	4	0
Figs ..... doz.	0	0	0	0	Pin Apples ..... lb.	5	0	8	0
Filberts..... lb.	0	0	0	0	Plums ..... ½ sieve	0	0	0	0
Cobs..... lb.	0	9	1	6	Quinces ..... doz.	0	0	0	0
Goosberries .. quart	1	6	0	0	Raspberries .....lb.	0	0	0	0
Grapes, Hothouse..lb.	6	0	10	0	Strawberries ..... oz.	0	6	1	0
Lemons 100	5	0	10	0	Walnuts..... bush.	10	0	20	0

VEGETABLES.

	s.	d.	s.	d		s.	d.	s.	d
Artichokes ..... each	0	6	to 0	8	Leeks ..... bunch	0	3	to 0	4
Asparagus .... bundle	4	0	7	0	Lettuce ..... per doz.	1	0	2	0
Beans, Kidney, per 100	1	0	2	0	Mushrooms .... pottle	1	6	2	0
Scarlet Run, ½ sieve	0	0	0	0	Mustd. & Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions.... per bushel	4	0	5	0
Broccoli ..... bundle	2	0	3	0	Parsley.....per sieve	3	0	4	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsnips ..... doz.	0	9	1	3
Cabbage ..... doz.	1	0	1	6	Peas..... per quart	5	0	7	0
Capsicums..... 100	0	0	0	0	Potatoes ..... bushel	4	0	6	0
Carrots..... bunch	0	6	0	8	Kidney ..... do.	5	0	6	0
Cauliflower ..... doz.	3	0	6	0	Radishes doz. bunches	0	9	1	6
Celery ..... bundle	1	0	2	0	Rhubarb ..... bundle	0	4	0	8
Cucumbers..... each	0	6	1	4	Savoys ..... doz.	3	0	4	0
pickling .... doz.	0	0	0	0	Sea-kale ..... basket	2	0	0	0
Endive ..... doz.	2	0	0	0	Shallots ..... lb.	0	8	0	0
Fennel ..... bunch	0	3	0	0	Spinach ..... bushel	2	0	3	0
Garlic ..... lb.	0	8	1	0	Tomatoes.... per doz.	3	0	4	0
Herbs ..... bunch	0	3	0	0	Turnips ..... bunch	0	6	0	0
Horseradish .. bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0	0

TRADE CATALOGUES RECEIVED.

Eliza Abraham, Fort Prospect Nurseries, Limerick.—*Catalogue of Bedding Plants and Florists' Flowers.*

J. Carter & Co., 237, 238, and 261, High Holborn, London, W.C.—*Gardener's and Farmer's Vade-Mecum. Part III.—Stove, Greenhouse, and Bedding Plants.*

T. S. Ware, Hale Farm Nurseries, Tottenham, London, N.—*Catalogue of Roses, Soft-wooded Bedding, Herbaceous, and Border Plants.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Anemone pulsatilla (*A. R. C.*).—Any florist who advertises in our columns could supply this native plant. We know that Messrs. Henderson have it.

Cleome integrifolia (*F. S. N.*).—We do not know where seed of the American bee plant, Cleome integrifolia, is to be had. Probably at Chicago.

Books (*A Constant Subscriber*).—If by "a botanical dictionary" you mean a dictionary explaining the terms used in botany, Henslow's "Dictionary of Botanical Terms" will suit you. (*M. W.*).—"The Vine Manual" contains much upon early forcing. You can have it free by post from our office if you enclose thirty-two stamps with your address. (*M. H.*).—The price of Mr. Salter's work on the Chrysanthemum is 5*s.*

Exhibition of Tricolored Pelargoniums (*T. W. Johnson*).—It is to be at the Royal Horticultural Society's garden, at South Kensington, on May 21st, and the public will be admitted by paying 2*s.* 6*d.*

Spent Hops and Malt Combs for Mulching (*Vitis*).—We have known spent hops used as a covering for the Strawberry-bed to keep off slugs, and to answer the purpose of litter in keeping the fruit clean, &c. They do not injure the flavour of fruit. Malt combs we have also known used as a mulching for the Vine-border. Whether the roots will take to it in preference to anything else we cannot say, as we know of no experiments on the subject.

Verbenas for Exhibition (*W. W.*).—Foxhunter, Charles Turner, Géant des Batailles, Madame Hermann Stenger, Annie, Mauve Queen, Snowball, Lilac King, Admiral of the Blue, Wonderful, Black Prince, and Rose Imperial. To these you may add, if you do not object to the higher price, some of Mr. C. J. Perry's fine new varieties.

Substitute for Glass (——).—Oiled paper was formerly employed; but this has been superseded by linen or calico dressed with the following preparation:— Old pale linseed-oil, three pints; sugar of lead (acetate of lead), 1 oz; white resin, 4 ozs. Grind the acetate with a little of the oil, then add the rest and the resin. Incorporate thoroughly in a large iron pot over a gentle fire; and, with a large brush, apply hot to a fine calico stretched loosely previously, by means of tacks, upon the frame. On the following day it is fit for use, and may be either done over a second time or tacked on tightly to remain. Cucumbers and Melons may be grown under such frames, but they require much more attention than when glass is employed, the plants are so liable to be drawn and unfruitful.

Double Wallflowers—"S." inquires if there is still in existence a good double dark self Wallflower; as the only sort he can obtain is flaked with yellow and not worth growing, though sold generally under the name of double blood red.

Driving away Ants (*A Subscriber, Waterloo*).—You may drive away the black ants by scattering a little guano, or by pouring ammoniacal liquor over their haunts.

PRUNING RHODODENDRONS (*K.*).—To secure the branches, or rather the dormant eyes upon these, breaking well, you should cut the plants down by the end of May; and if you reduce them much it would be better to do so early in the same month. If you cut the plants in much they will not flower in the following year. As regards the hybrid scarlet varieties, we would let them flower, and then cut them in as required; but you must not expect them to flower much during the next two seasons.

LAWN THIN AT BOTTOM (*E. N.*).—Sow over the lawn Suckling Clover (Tritolium minus), at the rate of 8 lbs. per acre, and after sowing run an iron rake over it lightly, and roll well. Allow the grass to grow until July, then mow it, and keep it well rolled and mown every three weeks until October; then leave off mowing, but roll well once a-week.

DESTROYING MOLES (*Idem*).—The only effectual mode is to trap them. Green elder leaves placed in their runs are said to drive them away.

VIOLA CORNUTA PLANTING (*W. S.*).—You should allow 9 inches from plant to plant, the same distance from the side of the bed, and 1 foot from the Pelargoniums.

PEACH TREE SHEDDING ITS FRUIT (*J. T. M.*).—From your description of the treatment we should attribute the evil to lifting the tree; and its roots, being like so many bare branches, would be insufficient for the support of the fruit. We should have preferred lifting the tree at one operation instead of partly last year and partly this. The crop would not have fallen had you lifted the tree early in autumn, if the wood was well ripened last year; but from your account of the state of the roots this could hardly be the case, and the fruit would fall on that account quite as much as from the lifting.

RETURFING A CROQUET GROUND (*S. J. A.*).—To level and dig the ground, lay and beat the turf, would take an active man a fortnight to do the work well; but all depends upon the amount of levelling necessary.

SUPERPHOSPHATE OF LIME (*A Recent Subscriber*).—It should be applied in a solid form, a fair-sized handful being placed around the plant or shrub, and pointed in with a fork. You may also apply it to any kitchen garden crop, more particularly Turnips and Cabbages, at the rate of 4 cwt per acre.

PEAR TREES NOT BLOSSOMING (*Idem*).—We can only account for your trees not blossoming from the soil being different, and the treatment may also vary, but on neither point do you furnish any data.

WATERING NEWLY PLANTED HOLLIES (*A Subscriber*).—The newly planted Hollies which you have watered overhead, and of which the leaves are brown and the bark shrivelling, are likely to die. The watering overhead would not cause the leaves to become brown, and it would help to keep the bark from shrinking; but with the late showery weather we think it would do more harm than good, as by keeping the soil in a saturated condition it would tend to hinder rooting. We would water only during dry weather, and occasionally overhead; but if the bark is shrivelled and brown it is all over with the trees. The falling of the leaves does not matter if the wood remains green and plump.

SCREEN UNDER LIME TREES (*L. P.*).—Nothing would serve so well as Aucubas. Yew would also answer the purpose, but is of slower growth. The Aucubas should be strong plants from 2½ to 3 feet high, and should be planted as much apart. Privet, we fear, would not answer your purpose, as it grows but moderately, and is thin under trees.

GOLDEN FERNS NOT THRIVING (*P. M. Shuttleworth*).—It is not unusual for Golden and Silver Ferns to lose their young fronds after repotting. This is more commonly the case with old plants whose roots have been reduced at the repotting. All will come right when the roots are working freely in the fresh soil and reach the sides of the pots; but when we find plants in this condition we have young plants in a forward state to take their place. Old plants are not worth keeping more than one or two years after they become specimens. They become weak, and are impatient of repotting.

PIMELEAS AFTER FLOWERING (*M. H.*).—When the flowering is over they should be cut back to within an inch or two of the old wood and be kept rather dry at the root until they have broken and made shoots an inch or two long, when they may be repotted in a compost of two-thirds sandy peat and one-third turfy loam, adding silver sand liberally, and providing good drainage. They should be kept rather close, shaded, and sprinkled overhead until they recover the potting, and be careful not to overwater until the roots are working freely in the new soil, which should, however, be kept moist; afterwards give water more freely, but never until it is required, then afford a good supply. The plants cannot have too much air and light. They will do better in a cold pit in summer than in a greenhouse.

CASSIA CORYMBOSA (*Idem*).—Your plant with numerous soft young side shoots should be removed to the greenhouse; and if it has too many shoots they may be reduced in number by dishudding or rubbing away the weakest and worst situated. The plant will most probably flower in August. Its season of blooming depends on the treatment, but is generally from May to August. We cannot determine the names of the Begonia and Fern; to enable us to do so we must have better specimens, and in flower or fruit.

NETTING FOR COVERING A FRUIT GARDEN (*S. A. N.*).—We should recommend netting with three-quarter-inch meshes, or if at some distance from the trees, inch meshes would not be too wide. Any of the firms advertising in our columns would no doubt serve you well. We cannot recommend dealers.

STRIKING AUCUBA CUTTINGS (*J. H. H.*).—You may put in cuttings of the present year's shoots in August, or when the wood has become a little hardened; and they would do well in small pots placed in gentle heat, but it is not necessary to cover them with a bell-glass. They strike with certainty and freely in a cold frame.

WATER IMPREGNATED WITH IRON (*Fenwick*).—Water but slightly impregnated with iron will not injure the plants to any great extent.

POA TRIVIALIS (*Inem*).—It is about equal in habit to Dactylis glomerata variegata, and is as easy of propagation.

OSMUNDA REGALIS (*A. H. D.*).—The Osmunda does very well planted in a pot, if well watered during the season of growth, and we have no doubt that it would succeed well if the pot in which it is growing were placed in one considerably larger, and the space between kept full of water for a time in summer. We have not tried this plan, but we have kept the pot in a saucer of water with satisfactory results.

TREATMENT OF LILIES OF THE VALLEY AFTER FLOWERING (*N. R. B.*).—You may plant them out of the pots in an east or west border, or other shady but open situation, or you may plunge the pots to the rim in such a border, and keep the plants well watered until the foliage turns yellow, when watering may be discontinued. We have not tried withholding water until they are required for forcing again; in fact we do not force the same plants two years in succession, and if we did so we anticipate an abundant crop of leaves would be the result.

PRUNUS SINENSIS FLORE PLENO AFTER FLOWERING (*Idem*).—The plant should be continued in a light and airy part of the greenhouse until the end of May, when it may be plunged out of doors in coal ashes in an open sunny situation, and be kept well watered throughout the summer. If it requires repotting this may be done when the leaves turn yellow. It is a hardy deciduous flowering shrub.

LILIUM AURATUM IMPORTED *versus* HOME-RAISED BULBS (*C. C. E.*).—The imported bulbs, because they are of flowering size are preferable to those raised in England; but we fail to recognise the assumed superiority. In our opinion English-raised bulbs are as good, if not better.

RHUBARB RUNNING TO SEED (*C. C. E.*).—The only means of preventing the plants forming seed-stalks is to divide the crowns every three or four years, and that cannot be done without weakening them or lessening the produce. The plants are more apt to run to seed in light poor soils than when growing in rich and heavy soil. The best means to adopt is to afford rich soil and plenty of manure, and to cut off the flower-stalks at the first eye from the ground before they have grown more than a foot in height.

HUMEAS DYING (*Edmund*).—The removal of the lower leaves is sufficient to account for the plants dying off as you describe, as in stripping off the leaves the stems would have their outer skin removed. The same results follow potting this plant deeper in the soil than it was before, for then the stem decays where in contact with the soil.

PELARGONIUM LEAVES BLACKENED (*A. S. A.*).—The blackness of the leaves sent was caused by the Cinerarias or plants near being infested with aphides or thrips, but we think the former, there being a deposit of those insects upon the leaves. The house should be fumigated with tobacco on two consecutive evenings when the leaves of the plants are dry, shutting it up closely, and choosing a calm evening for the operation. The plants may be syringed in the morning. It may be necessary to repeat the fumigation in a few days, indeed, in Cineraria culture fumigation is absolutely necessary, for all depends on the plants being kept free of insects. Fill the house so full of smoke that a plant cannot be seen from the outside.

CAMELLIAS UNHEALTHY (*L. H.*).—The Camellias, judging from the specimen sent, are in a very sickly condition. The leaves are yellow and blotched with brown, as if they had been constantly syringed or had had water dripping and hanging on them. The cause of the bad condition of the plants may be keeping the atmosphere much too close and damp in winter, but more probably the unhealthy state of the roots, which we apprehend are inactive and situated in wet sour soil. We advise you to have the plants repotted at once, using turf from a sandy pasture, cut from 1 to 1½ inch thick. In potting them, pull the turf in pieces and press it rather tightly. Remove as much of the old soil as can be done without injuring the roots seriously. Good drainage is essential.

INSERTING MUSHROOM SPAWN IN FIELDS (*E. S.*).—The best time for inserting Mushroom spawn in a grass field would be from the middle to the end of May. Pinching back the shoots of fruit trees on Mr. Rivers's plan will not cause premature decay, but if you want more strength allow the shoots to grow a little more.

VINE LEAVES (*A Subscriber*).—What you call "withered" is only the corrugated appearance which leaves assume when they do not grow fast enough to elaborate the sap supplied to them. Keep the air of the house moister.

FIRE INSIDE A VINERY (*J. H. J.*).—As your flue is heated by a fire inside your house you must use no damper, and in clearing out the ashpit you will require to damp the ashes, &c., to prevent dust and smoke finding their way into the house. To make secure, however, your best plan would be to surround the fireplace with a wooden box with a close-fitting door, and shut this door after you on doing anything to the fire. You need then have no dust in your house. This is more necessary in your case than when a house is heated by a stove inside the house, as if in the latter case there is but a short horizontal pipe there will be no back draught as sometimes happens with a flue.

VARIOUS (*Dagmar*).—Viola cornuta is good for bedding and edgings. It is raised by seeds, but is best propagated by cuttings The bit of flower sent looks like Honesty. It is of no use sending bits daubed on a letter. They should be sent separately in oiled paper, and if particular in a box. The leaf is like that of Begonia rotundifolia. Fern too far gone. Nemophila insignis may be mixed with the Lobelia. The Nemophila will flower at once, and will be fully over before the Lobelia is in its beauty. Lobelia speciosa may be sown now in a hotbed, but it is late enough. The plants should want pricking off at the latest by the time this appears. We think the proposed arrangement for the spring flower garden will look very well. As to plans No. 1 and No. 2, we would have preferred that all the beds had been numbered and the lists drawn out separately. When marked by writing on the beds it becomes confusing, and requires more time to look over. Of the two arrangements we prefer the second, because it is more simple and will longer continue in perfection. No. 1 would look best in early summer, but Tropæolums, Calceolarias, Gazania, Linum, and Petunias, would be almost the only flowers that would stand through the autumn. Moreover, you could keep up your Pansy-beds by pruning, manuring, and watering, or by ensuring fresh plants from seed sown now. You could also renew your Nemophila-beds, and even the Saponaria, if the first beds bloom early, by fresh plants in pots, or China Asters lifted. The plan No. 2 is not only simpler, but each bed is distinct without edgings, a matter of importance with some of these annuals, as even Saponaria, compact as a bed, is poor when kept in shape and line, as a centre or as an edging. With the exception of the Nemophila most of the other plants will stand through the autumn, if, at least, part of the seed-pods are removed; but unless you raise the Coreopsis, Jacobæa, &c., under protection and plant out, you will not have your beds so early in bloom as in plan No. 1. You do not say whether you sow in the beds or plant out. We have had splendid beds of Saponaria when planted in patches at regular distances; also of Coreopsis, Œnothera, &c.

Ribbon Border (*Constant Subscriber*).—Perilla or Amaranthus would do between the scarlets, in the ribbon border referred to at page 256, either separately or mixed. Then what would you say to this arrangement?—Scarlet Pelargonium, Perilla, Yellow Calceolaria, Tom Thumb, Purple Verbena, and Cerastium. The leaves of the white plant were much faded, and they are almost large enough for a Centaurea; but from the creeping habit we judged it to be an Arctotis. It would do for a front row, but generally it is best for carpeting a bed. It will not be so compact as Cerastium.

Flower-beds (*Fred*).—In your proposed bedding we approve of the first three arrangements. In No. 4 we would arrange thus:—Ageratum mexicanum, Scarlet Calceolaria, Centaurea, Crimson King Verbena. In No. 5 we would plant thus:—Yellow Calceolaria, Iresine, Bijou Pelargonium, Forget-me-not. As to the ribbon border, the arrangement will do very well; but you will require strong plants of Iresine to match in height with Salvia patens. We fancy Perilla would suit better for height. If the beds are in fair order they will not need such manuring, but if very poor you might add bone dust, or super-phosphate, about 4 ozs. to the yard, and that we would confine to within an inch or two of the surface. The most of the plants you have named would do well 1 feet apart—Bijou Pelargonium, if rather small, 9 inches; Forget-me-not, 6 inches; and Cerastium, 4 inches, or if small, 3 inches.

Propagating Iresine Herbstii (*Dagmar*).—It is best raised from cuttings, and propagates freely, but should be kept in a place warmer than a cool greenhouse in winter.

House for Fruit (*J. H. H.*).—Your proposed house 12 feet high at back. 5 feet high in front, width not stated, but having a pathway down the middle, a platform of slate on each side, supported by walls 2½ feet in height, with two four-inch pipes below on each side, and two four-inch pipes along one side of the pathway, will be very useful for many purposes. 1, The back platform will do for Melons and Cucumbers grown in pots and trained to a trellis on a level with the rims of the pots, if you have nothing higher on the front platform; but they would do better, give more room on the back platform, and enable you to have higher plants in front, if the Cucumbers and Melons were each trained to a single stem until they reached 18 inches from the glass, and were then topped and allowed to spread over wires at that distance from the glass. 2, You can have Fig and Orange trees in pots on the front platform; but if we wished to grow them fine, we would have the house in three divisions, and grow Melons in one, Cucumbers in another, and Figs and Orange trees in a third. 3, Vines can be brought through the front wall of such a house, planted 5 feet apart, and two rods taken from each as you propose, but when the Vines occupy the house, you could do no good with anything beneath them when fully established and in full leaf. You might have early or winter Cucumbers in such a house before introducing the Vines, but in that case the Vines had better go in above the wall-plate; or at any rate have double sashes or a wall of wood about 2 feet inside of the front glass, so that the Vines might be kept there, and cool, before you wanted to introduce them. 4, A south-east aspect will do, but a south-west one we should, if anything, prefer. It is early to lose the sun by one o'clock. We should not mind it for pot plants, but for early Cucumbers, it is important to have more sun. However, they would do. 5, With only two pipes exposed for top heat it will be well, if early work is contemplated, either to have two more pipes or to have openings into the chamber to let the heat out when wanted. 6, Two four-inch pipes round the front and two ends of a house 12 or 14 feet wide and 30 feet long, will do for a vinery where the Grapes would come in in September with little forcing. To have them in July and August, you would require three pipes as two flows and one return. To have them early you would require four or five pipes.

Mealy Bug (*E. S. D.*).—We know of no means of destroying the mealy bug on your Vines now, except constant washing with soap or glue water, and that will only keep the pest under a little. In places swarming with it, as yours is said to be, it is most likely that the walls, and stages, and shelves are infested. We have seen slate stages taken up and on every bearer you could scrape off the insects in handfuls, and hence all temporary expedients proved unavailing. In such circumstances we would thoroughly clean out one house, then we would shut it up closely and smoke it for forty-eight hours with turpentine and sulphur burned, which, of course, would destroy every green thing and all animal life. We would then wash the house all over with boiling water holding soap in solution, dash it into every joint, and when dry and exposed, fresh paint and clean. We would next bring in the plants that were cleaned, by cutting them back and bathing their tops and roots, and then fresh potting in a moist heat. For the present we knew no remedy but washing, and that will only be a palliative. We never found smoking with tobacco of much use.

Names of Plants (*W.*).—Æschynanthus maculatus. (*J. P., Reigate*).—1, three varieties of Primula villosa; 4, a garden Anemone. (*J. T., Morpeth*).—Selaginella Martensii var. (*An Old Subscriber, Kingston*).—Arctostaphyles tomentosa. (*Primula veris*).—Incomparable Orange Double Jonquil.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 30th.

Date.	Barometer.		Thermometer.				Wind.	Rain in inches.	General Remarks.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 24	29 659	29.580	63	43	53	50	S.W.	.18	Heavy clouds, showery; white clouds; rain at night.
Thurs. 25	29 818	29.693	53	42	53	49	N.	.01	Hazy and damp; overcast: densely overcast at night.
Fri. .. 26	29.760	29.646	57	42	51	49	E.	.02	Hazy; overcast; densely overcast.
Sat. .. 27	29.523	29.484	60	29	52	49	S.W.	.03	Cloudy; masses of white clouds; very fine.
Sun... 28	29.727	29.370	61	30	52	49	E.	.00	Foggy; overcast; slight frost.
Mon... 29	29.830	29.786	65	32	51	48	N.	.04	Fine; very fine; exceedingly fine at night.
Tues. . 30	29.743	29.664	64	30	52	49	W.	.12	Cloudy; very fine; fine, slight frost.
Mean	29.723	29.603	60.43	35.43	52.00	49.00	..	0.40	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BREEDING DARK BRAHMA POOTRAS.

I had fully intended the article on vulture hocks to be my last upon the above subject, but some of the letters which my papers have called forth appear to make a very few further remarks desirable.

My object in writing has been to raise the standard of this truly splendid breed, and in particular to draw attention to the Dorking taint now so very prevalent; to point out the general degeneracy of form and size; to insist upon better combs and leg-feathering; and to seek after more uniformity of colour. In several of these respects my observations have been to some extent misunderstood.

With respect to the Dorking cross, "Y. B. A. Z.," remarks, that "the fifth toe is persistent in a wonderful manner, and is far oftener seen than even the cruel expression," which he agrees with me is often an attendant on Dorking blood. This is quite correct as the general result of an indiscriminate cross—that is, if the cocks and hens of the crossed strain be indifferently bred from, the fifth toe will appear for an almost incredible time; but if a Brahma cockerel be mated with Dorking hens, and the pullets resulting be alone bred from, the Dorking toe will scarcely ever appear, though white legs and cruel faces will, and this is the plan usually followed. Moreover, my remarks applied specially to the examination of an exhibition pen, in which, of course, no five-toed bird would be allowed to appear. I must, therefore, repeat, that in judging of a pen the chief reliable signs of such a cross are, in the case of the hens, a large, coarse, cruel-looking head, white legs, and a comparative absence of "cushion," to which may be occasionally added a reddish tinge and perpendicular markings on the breast. The longer tail which "Y. B. A. Z." also mentions had escaped my observation; but now that he has noticed it, I believe he is quite right on this point, and intend myself, as I would advise others, to keep an eye upon that member for the future.

Regarding vulture hocks, I have already given my views at length, and have just received a note from the most extensive Brahma breeder in England fully agreeing with them, and relating circumstances to show the great injury which is being done by the present rule of judging. I must, however, earnestly protest against the suggestion of "Falcon" and "Y. B. A. Z.," that the birds be trimmed to hide the fault and pass muster. The dubbing of a Game cock has not the slightest analogy, for the simple reason that the practice being universal and entirely irrespective of any particular shape in the member, makes any fault in the comb of a particular strain of no consequence to purchasers or exhibitors, and, in fact, makes the character of the comb altogether immaterial. But the purchaser of a vulture-hocked bird which had been trimmed would be deceived in his purchase, since his produce would be different from what he anticipated and desired. The analogy with the trimming of a Spanish fowl's face may be granted, but as I am one of those who hold that all birds thus treated ought to be disqualified, I shall not be required to argue the question, but I will simply record my emphatic opinion, that its present state, more especially after Mr. Heath's long-continued but ineffectual protests, is alike disgraceful to exhibitors and judges. I happen to know that previously to the Exhibition at Bristol the principal cutler in that town disposed of about half a dozen pairs of small forceps to Spanish fanciers—for what purpose it

is needless to say; but I hope such instruments will never be used generally, save as an admitted infamy upon the Brahma fowls.

Lastly, with regard to colour, I must say a few words in reply to Mr. Lacy. I may be mistaken, but there appears to be a tone of complaint about his letter which I cannot account for, as I have never depreciated either his views or his birds. He seems to imply that if people attend to my remarks (certainly mine have been very lengthy), we shall soon deteriorate Brahmas to "wretched mongrels;" whereas my endeavour has been to point out the evil, not only of crosses from different breeds, but even of differently-coloured strains; and it is somewhat singular that I have a note from the most practical breeder of Brahmas in the three kingdoms, remarking that if my cautions were attended to "we should *not* have so many mongrels as we see now."

Mr. Lacy says I "will have it" there are two schools of colour, and have "been pleased" to attach his name to one of them, and "hinted broadly" that he leans to a brown shade. I hinted at more than two schools; but if Mr. Fowler's letter, compared with his, does not prove that there *are* such two schools, I confess I am hopeless to prove it myself. He admits that he does prefer the brown tint: of what, then, does he complain? for I made no other assertion regarding him, and never implied that his birds were on that account worse than others; and I placed him at the head of the "school" to which he belongs, just as I should have placed some one else, had he, instead of Mr. Lacy, taken in succession the highest honours at our leading show. He appears, in fact, to have misunderstood me as condemning his views, which I assure him I had no thought of doing. I have always regarded this question as one simply of individual preference, just as one man prefers Buff Cochins and another Partridge, and I know that either the brown or the clear colour in Brahmas can be, and has been, produced simply by careful selection. Mr. Lacy seems to forget that when Mr. J. K. Fowler affirmed his favourite brown colour to be introduced "within the last few years by a cross with the Partridge Cochin," I felt compelled to contradict him; as I feel now compelled to question also the statements he has himself made; since he, like Mr. Fowler, is not content with simply defending his own favourite colour, but maintains that the other is "abortive" and wrong. Such a view, from either side, I feel it necessary, in justice to breeders generally, to controvert.

Mr. Lacy argues that the brown is "the correct and only colour" because the down on the chick's back is brown. To refute this it would be sufficient to remark that if the argument be sound, all the down on the body, except the neck and head, ought to be brown also; but as if to show the utter fallacy of such reasoning, it is singular that the heads of many Brahma chicks are darkest and brownest of all, whilst they change afterwards to white in the cocks, and light silvery-grey in the hens.

With regard to Mr. Teebay, I have incidentally recorded my own admiration of the rich colour he used to show, and I am well acquainted with his views upon the subject, but did not feel it right or in good taste to give them, as he is not at present an exhibitor. I can assure Mr. Lacy that these views by no means coincide with his own, and since he has mentioned Mr. Teebay's name, I must remark that the dark colour he showed was a very different tint from that he admires. Not to mention minor points, I will just say, that whilst the pencillings or dark markings themselves in Mr. Lacy's birds are usually very dark brown, in Mr. Teebay's they were a rich black, far denser and more lustrous than any now seen. With respect to Mr. Boyle's exhibiting hens as brown as his own, I, of course, spoke of the general colour each gentleman showed. Pens are sometimes selected to suit the known preference of particular judges; and it is a little singular, that the very last pair of pullets I have seen exhibited by Mr. Lacy were of that identical "abortive" silver-grey colour he professes to condemn. His pullet at Whitehaven was the same.

Finally, in saying that such silver-grey pullets always moult brown, that those who breed them will obtain small size, light breasts, heads and necks white halfway down, and bad feathering—in all these Mr. Lacy is wrong in point of fact. A friend of mine has just purchased from Mr. Boyle, at a high price, a pair of two-year-old hens of good size, heavily feathered, splendidly pencilled, and perfectly and absolutely free from brown. I have now in my own possession a hen of the same age from another yard, which is very nearly free from brown, but splendidly pencilled on the breast, and in size the very largest—I will not say ever bred—but that I ever saw; and when I say she is larger than his own first-prize hens at Birmingham, he will admit she cannot be very "small." And finally, let any one inspect Mr. Ellis's well-known yard and say how far such remarks will apply to it.

I trust I shall not this time be misunderstood, or give offence. My sole object is to contradict the notion that either colour is the "only proper" one for a Brahma, and that the other must be the result of a cross. Both are legitimate, and the result of legitimate and careful selection in breeding. I can admire and see beauty in each, and my opinion is, that the time is nearly come when Brahmas should be again subdivided into three colours, which might be called "Light" (as it is now), "Silver-pencilled," and "Dark or Brown-pencilled." As soon as the number of entries shall justify this, I think there is as much reason for the sub-division as in the case of Cochins, and it would end the present strife about the matter; but meantime I would strongly oppose a pen being either commended or condemned on account of its colour, since one has as much right to his fancy as another. I would only insist that each bird should be uniform in tint, and not as now often seen, contain patches of both. To this end I reiterate my caution, that the indiscriminate crossing of widely different colours will ruin both, and to insure uniformity, that before a cock is purchased the hens of the same yard be found to correspond pretty nearly in colour to those already kept. So will either tint be preserved in harmony and perfection.

With these remarks I conclude my notes on Dark Brahmas, and if I take up the pen again it will be concerning another breed.—Nemo.

PETTED BANTAMS.

My half dozen Bantams have everything their own way. I have given over the garden to them. They are lords and ladies of all they survey there. I cannot have flowers; I cannot have vegetables. To humour my Bantams, I must have nothing but gravel, worms, and insects. If I do not go down every morning and feed them upon the very best shelled wheat they march into the house and peck at my legs. When the snow came on the other day, they left their house, as not being comfortable enough for them, and insisted upon roosting on the backs of my best mahogany chairs in the dining-room.

The noise they make when any female member of the community lays a ridiculous egg, is dreadful. If I go out and beat them, they only make more noise, and the moment my back is turned, the cocks all set up crowing, in token that they have got the best of me.

They are the artfullest cocks and hens I ever knew. They are aware that I am flattered by their flying up on the window-sill, and rapping with their beaks on the glass to call my attention when I am busy writing, and they do it on all occasions, their reward being some chopped meat. They have no objection to their own species, or a handful of canary seed, which they consider a dainty. I even indulge those fowls with black beetles, which I take much trouble to catch for them with elaborate snares in the back kitchen.

What thought and cruel ingenuity do I exercise on behalf of those Bantams! I pour some double stout into a deep basin, I place the basin in the back kitchen, I fix a little wooden ladder to the side of the earthenware wall, and then I enshroud the back kitchen in Cimmerian darkness. The beetles lurking in their holes smell the double stout, which they instinctively know to be Barclay & Perkins' best, they creep out cautiously, ascend the ladders, and reaching the giddy top of the wall make a false step, and fall into the seductive but treacherous abyss. But they are not drowned; such is the refined cruelty of man, that he only puts enough double stout in the abyss to tempt his innocent victims to besottedness. When they recover from the stunning effects of their fall, they think they are in the beetles' heaven, feeding upon the ambrosia of their gods. They wallow in their plentiful cups, and sing roaring songs about beetle love and double stout (they call it "rosy wine," of course), and think it will be ever thus; but artful and cruel man appears in the morning letting in the reflective light, and the unhappy beetles know that they have been deceived. They cry, "Ah! betrayed," and make a rush to scramble up the wall, but are so drunk that they all tumble down again, and their fate is to be eaten alive in a state of intoxication by those bloated Bantams. Never did Roman emperor enjoy such wild, ruthless, extravagant, luxurious saturnalia as those fowls.—*(All the Year Round.)*

LIGURIANS IN IRELAND.

On opening The Journal of Horticulture of April 11th, and running my eye over the columns devoted to bees and bee-keeping, I was much pleased to see the article from "A Devonshire Bee-keeper," on "Propagating Ligurians." I have for some time been looking forward with much interest for the information so fully contained in it, inasmuch as I introduced, last autumn, into my apiary—previously consisting entirely of black colonies—two stocks of the foreigners, obtained from Mr. Woodbury, and I have been most anxious to discover the most likely means of maintaining the strange blood in the purity in which I received it from him.

You may, perhaps, have remembered that in a letter which I addressed to you last autumn on the subject,* I stated that previous to that period I had been deterred from introducing the Ligurians into this neighbourhood, both from the fact of the very high prices demanded for them by some English bee-keepers, and also from their refusing to guarantee their safe arrival in this country. These remarks of mine fortunately met the eye of Mr. Woodbury, who kindly communicated with me on the subject, and made me such satisfactory and fair offers on both the above points, that I was induced at once to accept them, and the result up to this has been most satisfactory to me in every respect.

As the progress of Ligurian bees in this country, during even so short a period, may be a subject of some interest to the Irish readers of your bee-columns, I will mention a few facts connected with them since they came into my possession, premising that almost from the day of their arrival, early in September last, to the present moment, the severity of the autumn, winter, and spring has been unprecedented. And here, at the first start, the opinion of the Baron Von Berlepsch was, in my mind, completely verified—viz., "That the Italian bees are less sensitive to cold than the common kind;" for whereas, amongst my black stocks not one escaped without more or less loss of life, owing to the cold and sudden changes of the weather, not one of the Ligurian bees died from the same causes, and this under most disadvantageous circumstances. When I received them, late in the autumn, they had scarcely a particle of honey, it being essential to their safe transit that they should travel with light combs. Artificial food I of course supplied them with at once and liberally, and the manner in which they stored and appropriated this surprised me, one hive increasing in weight from 16 lbs. nett to 49½ lbs. nett, from the 20th of September to the 9th of November. The other stock, although it did not lay up winter stores so rapidly, is now in quite as prosperous a condition, both having a large and thriving population, and the young bees clearly and beautifully marked in each, testifying to the pureness and fecundity of the queens at their head. So far, then, the prospect of my establishing the Ligurians in this locality looks cheerful enough, were it not for one great drawback which I feared all along, and which the "Devonshire Bee-keeper's" letter almost confirms —viz., that my apiary is almost entirely unprovided with bar and frame hives, only one of my black colonies being supplied with that necessary (as it appears from his letter) article for propagation. When commencing bee-keeping, I started on the wise, as I supposed, principle of "learning to creep before attempting to walk," so I invested entirely in plain Scotch hives. Under these unfavourable circumstances I can only ask, "What am I to do?" feeling sure that I shall obtain from you advice as to the best course of action under the circumstances.

What is the proper time to commence forming "nuclei?"

Before concluding my desultory remarks on the Ligurians here, I must add, how much I was struck by the wonderful advantages of the bar and frame hives in transporting bees, both as regards safety of the combs and perfect ventilation. The manner in which Mr. Woodbury secured them was to me a marvel of skill and ingenuity, and I believe they might have travelled without injury to the end of the world.

As the season advances, if it should be a matter of any interest, I shall be happy to report the progress of my new friends and my attempts to increase them. Curious to say, after such a severe winter not one of my stocks did better than one in a glass observatory hive of my own construction. The hive which was single glass, I placed in a box, with an interval of half an inch carefully packed with tow and wool, and hardly a bee died in it.—Squib, *Co. Kildare.*

[You will do well to transfer some of the strongest of your black colonies into frame hives during the present month, or as soon as they become populous. You may find hints on this subject which will be of service to you in Nos. 75 and 280 of our New Series, but the process is briefly this:—During the forenoon of a fine day drive all the bees into an empty hive and put them on their accustomed stand. Take their original hive in-doors, and cut out all the combs whole. Fit these into frames, and support them therein by strips of wood three-eighths of an inch wide and one-sixteenth thick, tacked at the top and bottom, two on each side of every comb, and by zinc clips when necessary. Thick combs must be pared down, but take care that the cells on either side are left of equal length; also that the "partition wall" is in the centre of each bar. Crooked combs should be set straight, and if not sufficiently pliable to permit of this being done may be slightly warmed before the fire. It will be found convenient to remove the projecting Woodbury rib from the bars, and the bees will attach the combs to them with greater facility if their under surface be coated with melted wax. Having completed the job, and arranged the combs in their new apartment in the same order as that which they occupied in their old one, deepen the hive by the addition, on the top, of another, from which the frames and crown and floor-boards have been removed; set it on the old stand, and knock out the cluster of bees into the upper hive on the top of the frames of the lower one, putting on the crown-board immediately. Next morning take away the inserted hive, and the day after that remove the supports from all the combs which the bees have fixed. If any are not secured, their supports may be left until they are fastened.

The formation of nuclei may commence as soon as any of your stocks are strong enough, and possess a tolerable quantity of drone-brood.]

* This letter appeared in No. 279 of our New Series.—Eds.

DRONE BROOD.

I examined a Woodbury hive to-day (April 23rd), for the purpose of excising royal cells. I only found one, apparently an old one, empty (the stock was a swarm of last year); but in the middle of one comb I found about thirty large cells covered with semicircular domes of a light brown colour; they stood out very prominently and conspicuously in the combs, and each contained a large white grub. Although I have busied myself much with bees for a few years, I have not had the means of looking inside a hive till lately, and am ignorant of the various appearances of drone and worker brood, &c. I conclude the cells referred to contain drone brood. Had they been formed the other way up—*i.e.*, vertically—and on the edge of the combs I should have concluded they were royal cells. I may inform you that the stock, though a swarm of last year, gave me 18 lbs. of honey, is now very strong (it has been fed), and has a splendid queen, and plenty of sealed honeycomb. If the above are drone brood, why so few of them? I shall be very glad of more information about the method of emptying combs given in page 288.—C. C. E.

[It is too early to look for royal cells, especially in so backward a season as the present. The large cells with semicircular domes contained drone brood, and that in an advanced stage, owing to these few cells being placed in the centre of the comb. The number was doubtless limited by the number of drone cells, but had you carefully scrutinised the interior of such large cells as exist nearer the edges of the combs, you would most probably have found them also tenanted by eggs and larvæ in a less advanced state. We will endeavour, whenever we have the opportunity, to obtain further information respecting the German centrifugal machine for extracting honey from the combs.]

ECONOMY IN COAL.

I suppose every one wishes to be economical in housekeeping; the majority from necessity, the minority, I hope from a wish to make their charity purses larger. The best rule is—"Economy practise, but do not be mean."

A little more than a year ago, I met, when away from home, a gentleman who was full, very full, of a new plan, which if carried out would make his coal bill smaller, smaller by half, and yet his fires were to be as large and as warming as ever. I smiled incredulously, thinking him a most enthusiastic man. He said, "Now here's my plan: Send for your blacksmith, set him to take the width and length of your grate, and floor it with a piece of iron half an inch thick." "What!" said I,

"so that no cinders, and not even any ashes can fall through?" "Yes, exactly." "But how can the fire draw up? and how dull and dusty your fire must look." "Nothing of the kind, I assure you; only try, and then you will see." But I did not try, and being very much attached to old ways, I poked my fire all the more, and rattled the dust out vigorously, thinking, "Whoever will may have a dull fire, but I will not."

Nearly a year passed, and I heard no more of solid-floored grates, when the delusion, so I deemed it, reached my own neighbourhood. Being assured by experienced persons of the economy and convenieuce of the new plan, I determined to try it, but only in my study. A son of Vulcan, well experienced in the matter, came and measured my grate, and speedily, instead of open ironwork, it was floored with a solid slab of iron, so that not a grain of dust could drop through. Next morning I was surprised to see the fire burning very brightly, and to have no complaint about the difficulty of lighting it. I was also surprised to find how seldom I had to get up and pnt on fresh coals. After a week's experience we were all satisfied of the comfort and economy of the new scheme. Gradually I have extended the plan throughout the whole house; first in my study, then to the nursery, then to the dining and drawing-rooms, and, lastly, to the kitchen. Our experience reaches over two months, and we would on no account return to the old system. An artisan's wife, a careful body, weighed her coal, first while following the old plan, then after adopting the new one, and finds that by the latter she saved just one-third.

I like this flooring the grate with solid iron for the following reasons:—First, the fire wants making up only three times a-day; then there is a total consumptiou of coal, or nearly so, as there are, or ought to be, uo cinders, except those left in the grate, and the larger pieces come in nicely for lighting the fire in the morning. Then one's fire is not always, as the maids say, "dropping out," but will keep in for hours, and if once "low," draws up again very quickly. Also, of this I am sure, the amount of heat is greater than obtained by the old plan. The servants make no objection, only they are apt to neglect what I insist on—viz., throwing up every cinder that comes through the front bars. The dust accumulating at the lowest bar must be geutly removed by the poker. In large towns, where I believe riddliug of cinders is never practised, the saving would be greater than in the country, for, of course, the loss of cinders ought to be borne in miud. I feel so certain of the economy of this plan, that I have had the grates of some of my poorest parishioners altered for them.

I send this accouut to "our Journal," as many careful housekeepers who may not have heard of this plan, will be glad to have a hint in economy, and, iudeed, the saving of coal is a national duty, inasmuch as it is believed by scientific men who have examined into the matter, that our mines will become exhausted in a certain number of years.—Wiltshire Rector.

[We believe that this plan is worthy of adoption, and we found our opinion not only upon our correspondent's experience, but upon that of Serjeant Warren, who, we believe, was the originator of the plan. This well-known author is Recorder of Hull, and at a dinner held in that good old port in the Jauuary of the present year, he publicly advocated this mode of economising fuel. His address was excellent, and with equal excellence it has been versified by a clever physiciau as follows:—

"Mr. Mayor,
Corporation, and Town,
To all, with a fervour sincere,
I wish every blessing may crown
A prosperous happy New Year.

Permit me some facts to instil
Io your minds, on a practical question;
That may show you at least my good will
By a kindly and useful suggestion.

Do you wish to obtain without waste
Due heat from the coal you have paid for;
Or prefer it to burn out in haste,
Not working the good it was made for?

Do you wish—I may ask in a word—
To save your domestics some trouble;
To lessen your coal bills a third:
And the warmth of your hearth to make double?

If you do, to my guidance attend:
For some seven years, more or less,
I have tested, with many a friend,
A plan with unbroken success.

By me no invention is claimed.
I read the idea in *The Builder*:
And the paragraph ought to be framed
By some eminent carver and gilder.

If you look how your grates have been made,
You'll see that the blacksmiths—Od rot 'em!
Have forged, for to forge is their trade,
A layer of bars at the bottom.

Now, having been called to the Bar,
I know where the bars ought to be;
And those blacksmiths—whoever they are—
Should be brought up, as forgers, to me.

For observe how the coal must be placed
'Twixt a couple of draughts to consome:
Which causes your fuel to waste,
And the heat to grow less in your room.

Now when I first reached my hotel
On Wednesday afternoon last,
The fire was made—and made well—
Yet I shivered at many a blast.

So I sent for my landlord—(good man,
I knew I should not overtask him),
And besought him to follow my plan.
He has done so, with what result?
Ask him.

Since my fire was made up at ten
I've enjoyed all the warmth I desire;
And at five I'm the warmest of men.
Without thrusting my nose in the fire.

Not an ounce of additional coal
Has been needed, nor watching, nor stoker;
Save to break an occasional hole,
Or to press down the top, with the poker.

Now, how was all this brought about?
I will tell you,—as blacksmiths environ
Your excellent town, call one out
With a small piece of common sheet iron.

He will speedily cut you a plate
(Any pattern will do on a pinch),
It should just fit the base of your grate,
With a thickness one-sixth of an inch.

Let your maid in the usual style
Lay your fire, and have it ignited,
Leave the lowest bar open awhile,
And you'll be both amazed and delighted.

For as soon as the fire burns through
The coals, with warm glow and bright flashes,
The heat will not fly up the flue,
Nor your hearth be encumbered with ashes.

In my breakfast-room grate I began,
In my dining-room next, and my kitchen;
Then everywhere followed the plan
With success that was really bewitching.

In my residence (likewise) official:
And, my fire once lit, I may say
That attention the most superficial
Will last for the whole of the day.

Now, pray do not smile at my plan,
Nor think my suggestion is dull;
For I'm anxious to do what I can
For the good of the old town of Hull.

Try it fairly, I beg of you all,
Ere your coal stores unduly decrease:
Begin with our noble Town Hall,
And the Town Clerk, and Clerk of the Peace.

I don't mind defraying the cost
If you find that experiment fail;
And pray ask my excellent host,
Mr. Baiston, to tell you his tale.

As I write for the good of the town,
For householders mighty or small,
Pray publish the facts I note down
For the general profit of all.

For the cold winter winds bite severely;
And coal is expensive to order:
I remain, my dear Mayor, most sincerely—Yours,
SAMUEL WARREN,
Recorder.

P.S.—If this plan do not answer—
For chimneys may obstinate be—
Just draw out the plate—which you can, Sir,
For it isn't a fixture, you see.

Approving the scheme and its fitness,
And finding a trial work well—
Mr. Bainton declares we shall witness
Its merits throughout his hotel.

On reading this amiable letter,
And the plan which its pages unfold,
I ask, Could there well be a better
Suggestion to keep out the cold?

Hurrah! for a true friend in season,
His name shall be hailed with a cheer,
He may claim the good wishes—with reason—
Of ten times "Ten Thousand a-Year."

"Now and then" the idea which he mentions
Will be known as his "New Work, with Plates."
And the fruit of his kindly intentions
Will be famed as the Warren-ted Grates.

All hail! then, warm hearths and bright fires.
Henceforth from chill currents set free,
Till ice-crowned old winter retires,
And we welcome the "Lily and Bee."]

OUR LETTER BOX.

Preserving Eggs (*E. S.*).—We answered a similar query in our last number, page 304.

Peacock's Feathers with a Film of Skin (*A. B.*).—Your bird is out of health, and probably feverish. The feather forms properly but dries up. Give no whole corn. Feed on meal slaked with cold water, and let him have plenty of lettuce. It is an admirable poultry medicine at this time of year. There is no objection to splitting and removing the filmy case that holds the feather.

Brahma Pootra Chickens Losing their Feathers (*W. F.*).—It is often the fact that chickens appear more naked when their feathers are coming than they did while only partially covered with down. The wing feathers grow faster than the others, and throw them into the shade, and many parts of their bodies are always naked till perfectly fledged. Many of our own are in this predicament; but we do not think it worth notice, as they are evidently in perfect health. We like to let well alone.

Chickens' Legs Swollen (*North*).—We imagine, from your description, that the hens have left the chickens for some time. If so, that will partially account for their illness and falling off. They lack the covering and warmth at night, or it may be, you allow the hens to roam at liberty, and they drag the chickens through the high wet grass. It is not high for the hens, but it is for the chickens. We were watching our Brahmas running in the grass a day or two age, and seeing the treatment our hayricks have received during the cruel winter, we were delighted to find the chickens' legs were not visible. Fancy chickens seven weeks old a hundred yards from home, and overtaken by one of the pelting storms we have had. If they were lucky enough to reach home they would hardly recover; but whether with or without the hen, they cannot do well if kept on boards. That fact is enough to account for crampy and swollen legs. You do not, however, allow them sufficient space; 12 feet square might have done well some time since, but they have grown in size and requirements, and want elbow-room Choose a dry, dusty, and sheltered spot. If you have no other house to give them, take an old china crate, cover it carefully at the top and on three and a half sides. See that inside it be full of dust and thoroughly free from draughts, and at night put your chickens in it. Place food and water close at hand for them to find it in the morning. You will save many by doing this, and another year you will save more by putting the hen and chickens out of doors, but keeping the former under the rip.

Pine Sawdust for Egg-packing (*Idem*).—We should prefer it to bran for packing eggs; but for a journey by railroad, even of four hundred miles, we do not think it would injure them for hatching.

City Columbarian Society (*B. C. J.*).—The Secretary's address is, Mr. J. Ford, Stamford Cottage, Summer Hill Road, West Green, Tottenhnm, N.

Honey Candying in Combs—Artificial Swarms (*A Constant Reader*).—An extremely low temperature within the hive is the cause of honey candying in the combs. Full instructions for making artificial swarms with common hives were given by Mr. Woodbury in No. 161 of our New Series, and a supplementary article from his pen on the same subject will be found in No. 217. His instructions were also epitomised by us in reply to a correspondent in No. 271.

WEEKLY CALENDAR.

Day of Month	Day of Week	MAY 9—15, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock after Sun. m. s.	Day of Year.
9	Th	Meeting of Royal and Zoological Societies.	62.0	39.7	50.8	17	20 af 4	32 af 7	31 af 9	morn.	5	3 42	129
10	F		61.7	40.0	50.9	18	18 4	34 7	41 10	39 af 0	☽	3 45	130
11	S	Royal Hort. Society, Show and Promenade.	62.1	40.8	51.4	18	17 4	36 7	52 11	16 1	7	3 47	131
12	Sun	3 Sunday after Easter.	63.0	40.8	51.9	18	15 4	37 7	after.	47 1	8	3 49	132
13	M	Meeting of Royal Geographical Society, 8.30 P.M.	63.9	38.9	51.4	19	14 4	39 7	11 2	14 2	9	3 51	133
14	Tu		63.4	40.8	52.1	16	12 4	40 7	19 3	40 2	10	3 51	134
15	W	Meeting of Society of Arts, 8 P.M.	65.1	41.9	54 5	15	11 4	42 7	26 4	5 3	11	3 51	135

From observations taken near London during the last forty years, the average day temperature of the week is 63.0°; and its night temperature 40.4°. The greatest heat was 86°, on the 15th, 1833; and the lowest cold 25°, on the 15th, 1850. The greatest fall of rain was 1.14 inch.

CRINOLINE.

IN the course of the last year I observed in your Journal —I beg pardon, "our Journal" — an advertisement several times repeated, and headed, "The momentous question crinoline;" and once, "The great crinoline question solved." I found no solution of the momentous question attempted, either in that advertisement or in any subsequent one; but it naturally excited a spirit of inquiry, and such questions as the following arose in the minds of thoughtful readers: "How came such an advertisement to be sent to a Journal of Horticulture?" "Is there any occult or recondite connection between crinoline and gardening?" To whom is the great and momentous question addressed—to ladies only, to horticulturists, or to whom?" "What *is* the great and momentous question concerning crinoline?" and "how is it to be solved?" After ruminating upon these several queries, and turning them well over in my mind, I at length obtained, as I apprehend, a clue to the profound mystery.

Crinoline *has* something to do, or to *un*do with horticulture, and the great question for solution is, Whether it is to be included among "Our Garden Friends or Foes?" I turned to the interesting volume under this title by the Rev. J. G. Wood; there was no mention of crinoline in the index, nor did I find it included among the various species of *lady*-bird, all of whom he decidedly reckons as garden friends; so I conclude that he was too wise to venture upon so delicate as well as momentous a question, and prudence, therefore, dictates that I should confine myself to supplying the reader with materials for reflection, without pronouncing any verdict, and let him arrive at the solution himself by the deductive or inductive process, whichever he may prefer.

I fear that I must myself be of a peculiarly sensitive temperament when I avow that the very sight of crinoline among my flower-beds, except it be restricted within the very smallest dimensions, does communicate to me an indescribable sort of electric shock. It may be that in certain crinolined petticoats there is some mixture of copper and zinc wire which transforms them into portable galvanic batteries, only I am at a loss in that case to know where the acids are to come from which evolve the electricity, when those who wear those articles abound only in sweets: therefore I must abandon that hypothesis, and come to the conclusion that there is a certain condition of the nervous system superinduced in amateur horticulturists, like myself, at the sight of these appendages; for I have observed that those who have no real taste for the art can follow in the wake of crinoline, and behold with stoical indifference the ravages made by it; whilst I have been like a toad under a harrow at every step which it has made, my *harrowed* feelings rendered the more painful because I have had to endure my agony in silence.

"Ravages!" I think I hear some fair one whilst perusing these lines exclaim at that word ravages, "What ravages can this writer mean?" I nevertheless must in sober seriousness repeat the word ravages. Yes, I have witnessed many a blooming flower laid low in the borders by the mere fact of one of these mowing machines being conducted along its boundary, one-third at least of the hoop reaching into the bed and ruthlessly sweeping down whatsoever opposed its progress, the fair one who conducted the machine talking, smiling, laughing, heedless of the devastation she was committing! But what is even this compared with a party of three or four visiting your garden for the express purpose of admiring your pets? (very flattering!), who enter into the mazes of your parterres, the patterns being formed by narrow alleys of green turf, and follow each other singly, like wild fowl, through all the intricacies and involutions of the flowery labyrinth —the skirts of each one far overlapping the beds on both sides—looking before and on each side of them as they thread their course, talking and exclaiming, "Oh! how lovely!" or, "How beautiful!" or, "Dear, how very pretty!" (poor comfort!), but never looking behind them at the way in which they are sweeping down, as with the besom of destruction, Pelargoniums, Calceolarias, Verbenas, Petunias, and what not. A tornado, a typhoon, or a cyclone could do little worse.

Before the bedding season commences you are liable in the parterres to the same irruptions of the Vandal crinoline; when the beds are full of bulbs in bloom, the same "fell swoop" passes over Tulips, Anemones, and the like; you may even hear the snap of your Van Thols and Hyacinths, and plants of succulent or brittle stem, and see them lie decapitated before you. I confess, that pleased as I am to greet the joyous faces of such visitors when entering the garden, I feel relieved when I see them withdraw from it. They remind me in such a case of a saying of old Berridge, a facetious but truly excellent divine, that the visit of a friend sometimes afforded him two sources of pleasure. "I am glad," quoth he, "when my friend *comes*, and I am glad when my friend *goes*."

I say nothing of the conservatory, because I do not myself possess one worthy of being so called. The flowering plants in my humble greenhouse are not placed within the range of these formidable weapons; but I have seen conservatories on the premises of friends in which the alleys have been but narrow, or the whole area too much crowded with plants, through which, as armour-plated ladies have passed along, they have brushed off the bloom from those plants which were on the floor, to the no small discomfit of the gardener. I have heard of a conservatory in the vicinity of New York over the entrance of which was a notice—"Ladies not admitted except in bloomers."

Well, a good moral lesson may, after all, be derived from these trifling mortifications incident to human civilisation, if we have but grace to receive it. They teach us the vanity

of all that is worldly, and admonish us not to place our affections inordinately upon any pursuit or pleasure however lawful and even elevating it may be in itself. I remember that the poet Young in one of his satires (I have not the book by me to refer to), paints an amateur florist at a period when the passion for Tulips was a sort of monomania, and describes him as standing and doting over his "Paul Diack," a Dutch variety which reached a fabulous price, and then exclaims—

"O solid bliss! which nothing *can* destroy,
Except—a cat, bird, snail, or idle boy!"

Had the poet lived in our day he might have added a third line—

"Or crinoline, the bane of florists' joy!"

There is another department of the garden which invites a passing notice of crinoline, but in this instance it is doubtful whether it is to be considered as friend or foe. Mr. Wood perhaps would place it among the neutrals. I refer to that portion of the lawn now generally set apart for the royal and almost universal game of croquet. Crinoline in this instance, often most inconveniently, displaces the balls for the players on the one side, and as conveniently for those of its own side. It cannot for one moment be supposed that there is any conscious unfairness in such movements of the balls, but it is sometimes extraordinary, notwithstanding our entire confidence in the honesty of the sex, how a ball which is a long distance from its hoop, and in a wrong direction, after having been covered by the crinoline cup, is found by some magic or *leger de jupe* in position, certainly reminding one of the inexplicable mysteries of the thimble-rig! On one occasion, indeed, when I stood amazed at the clever transposition of a ball, the ingenious *artiste* made the avowal with ingenuous frankness and most bewitching smile, "I do dearly love a little bit of cheating!" but I relate this in strictest confidence as a secret never to be divulged by the reader. I draw no general conclusions from the fact: I leave the question *in mediis*, giving to crinoline the full benefit of the doubt.

And now, to bring this "momentous" subject to a conclusion, let me ask, How has crinoline ever come to be patronised? The chief art in female dress, one would suppose, would be to improve or set-off the beauty and symmetry of the wearer, but the reverse is the case in regard to crinoline. It may set-off the silks of the mercer, or display the pattern of a shawl, but assuredly it does not improve "the human form divine." I suspect that the person who first introduced such a preposterous fashion must have had some deformity to conceal, and she must have possessed no little boldness or courage to have ventured out of doors with such a skirt. Horace thought that the man's nerves must have been bound with brass who first ventured to navigate the ocean: there is no poetry in the case of the female who first steered her course through the streets of London encircled with crinoline; she was literally surrounded with hoops of metal of some kind or other. Query, brass?

One might solve this inquiry better if the *unde derivatur* of crinoline were clear. Whence does it derive its name? It may have been from the Latin *crinalis*, in which case we must conclude that the first petticoat of the kind was made of horsehair, or hair of some sort; but there are two little Greek words which come as near to the mark, and have also an affinity with horticulture—viz., *krinon* or *crinon*, a Lily, and *linon*, Flax; whence, possibly, *crino-lin*, a flaxen Lily—a mammoth Lily truly! The admired Japanese auratum, large as it is, dwarfs into insignificance in the comparison. Unfortunately, however, for this hypothesis, the Lily is inverted in the petticoat, resembling rather a monster Campanula or *Bell*-flower, and reminding one more of Big Ben of Westminster. There is, indeed, another use of the word *linon* in the Greek: it signifies a fisherman's net and an angler's line. Ah! can it be possible that crinoline was first adopted by an angler, or fisher of men, in order to render "the take" more destructive? I dare not further pursue this branch of the inquiry lest I myself get fishing in troubled waters; so I leave the whole question as among the doubtfuls—*in dubiis*, as the schoolmen say.

Let it not be supposed, however, that my quarrel is with those who wear the crinoline; it is with the article they wear; for what, indeed, would our gardens be without them? As a desolate wilderness, and our flowers would all

"blush unseen,
"And waste their sweetness on the desert air."

They give life and animation to the scene, and a well-selected bouquet of fair ones will at any time eclipse the most exquisite of flowers, and cause their lustre to pale and disappear like stars before the risen sun. I simply sign myself therefore—ANTI-CRINOLINE.

BLUE-FLOWERED BEDDING PLANTS.

IT is a very common remark among flower gardeners, both amateur and professional, that we have only one really good blue-flowered bedding plant—namely, Lobelia erinus speciosa, with its varieties. Now, to say the least of it, this assertion is very unfair, as by implication it reflects rather seriously upon the good name and character of more than one very respectable blue flower. The Lobelia certainly is the most serviceable, because the most manageable, of any blue-flowered bedders which we as yet possess, and for certain situations could hardly be surpassed by any the most visionary could imagine. In scroll or chain borders, associated with Cerastium and other low-growing plants, nothing can be better; but I have seen beds 8 or 10 feet in diameter massed with it entirely, with a view to complete some complicated combination of colours which nobody but the designer himself could detect; and however well such beds may look from a bird's-eye point of view, to ordinary earth-walking mortals like myself they appear decidedly weedy.

Delphinium formosum, while admired by everybody, is but little used as a bedder, though why this should be the case is not very evident; as regards colour, it is in no way inferior to Salvia patens, while in form, habit, and storm-enduring capabilities, it is beyond all doubt greatly its superior. For mixing in large informal beds, as centres for such, or as a second back row in ribbon-borders, it is very effective; in fact, by a moderate amount of pegging down it may be made available for nearly every situation in any design not absolutely arabesque. The sole blot in its character is, that between the first and second flowering there intervenes a period of six weeks or two months, according to the season; therefore to obtain a succession of flower it is necessary to plant doubly thick, and retard every alternate plant by cutting it back a week or so before the time it would be in flower. This naturally induces an earlier second growth, which will come into bloom in good time to take the place of the plants not subjected to the same treatment.

I have thus grown this Delphinium with varied success for the last three years, keeping the plants in reserve-beds over winter, and transplanting them about the end of April, by which time the flower-stems are well developed, and the operation serves the purpose of retarding them considerably, especially if a good part of the roots are cut off in the process.

I am now inclined to think that the same result might be better effected by using only seedlings of the preceding year. By raising them from two or more distinct sowings there is little doubt that a succession of superb blue spikes might be obtained from June to November, and I think it would be interesting to many readers of THE JOURNAL OF HORTICULTURE if some correspondent would show a little light on the subject.

Another blue bedder, the merits of which I think are but scantily appreciated, is the beautiful little Cape Aster (Agathæa cælestis); its tidy habit, dark green foliage, and sky-blue star-like flowers, all indicate it as a plant almost worthy of its name—certainly of more patronage than it has yet received.—AYLSHIRE GARDENER.

LAYERING VINES.

LAST year Mr. Thomson, writing on the coil system of planting Vines, spoke very strongly against Mr. Rivers's plan of layering any part of the old stems, and after describing his experience on this head, he said, "I prefer shaking out the roots entirely, and not layering a morsel of the stem." On page 28 of Mr. Thomson's book on "The Vine," I find him describing a mode of successful planting, thus—"I then spread out the roots, &c., laying three joints of the wood, as well as the roots, in the soil, making an incision with the knife below each bud to induce the emission of the roots," &c.

There seems to be some contradiction here; and it so happens that I have, and I now fear somewhat unfortunately, followed out the last directions of Mr. Thomson with a new house I have just planted. If the first plan—viz., that of 1866, is the right one, I am in fear for the success of my Vines, which I cannot well afford to lose. I felt doubtful about the nicking process at the time, but thought I could not be wrong

to do what Mr. Thomson recommends. I should be glad to hear how he explains this apparent contradiction.—Vitis, *Lincoln.*

[In reply to your correspondent "Vitis," allow me to say that it was my brother and not I who had a controversy with Mr. Rivers about layering the stems of Vines in the soil at planting.

I am still of opinion, founding that opinion on extensive experience, that my recommendation at page 28, as quoted by "Vitis," is sound. If he will turn to "Experiments with Vines," he will observe that I planted a house of Muscats at Wrotham Park, in 1847, exactly as he has done his, following my advice; and if he will address a note to Mr. Edlington, Wrotham Park, Barnet, who has the management of these same Vines at this date, he will learn that more healthy, fruitful Vines are rarely to be met with; and at a distance of time of twenty years, this is surely satisfactory evidence in favour of the system of planting "Vitis" has adopted on my recommendation. I can give him scores of examples of the same sort if he require them.—Wm. Thomson, *Dalkeith Park.*]

THE ORIGIN OF COLOUR IN TRICOLOR PELARGONIUMS.

I have read with great interest the very able remarks of your correspondent "M.," at page 291, and perhaps you will kindly allow me to thank him for his very courteous criticism of my letter on the same subject in your impression of April 18th.

Science, I am now aware, did not justify me in supposing that brown and yellow would produce red; but, paradoxical as it may appear to be, ignorance in this particular instance proved an advantage, as acting on this erroneous conviction, and aided by some principle inherent in the leaf, but of the nature of which and properties we are at present ignorant, the desired effect has been produced.

With regard to the Golden Tricolor Pelargonium mentioned by "M." as having been raised by Mr. Hally, of Blackheath, some fifteen or twenty years ago, and named Rainbow, I can only say that I never saw it, and never heard of it before; and it certainly seems strange that this variety should have remained in obscurity so long. Pelargonium Mrs. Pollock was raised, I think, in the year 1858, and when it was sent out two or three years later, some one in writing upon the subject subsequently, said, "that the advent of Mrs. Pollock literally took the horticultural world as it were by storm." That it created a sensation is not to be denied, and it is really difficult to believe that a variety quite equal to it, according to "M.," should have been flourishing for so many years before that time at Deptford or Blackheath, and yet for so very few people to have known of its existence. I most sincerely trust, however, that "M." will set the matter at rest by exhibiting a plant of this variety at the exhibition of Tricolor Pelargoniums to be held at Kensington on the 21st of this month.

I cannot at present refer to Mr. Pearson's letter, but I think that he did not exactly say what "M." says he did—viz., "that no single plant of this class of Pelargoniums was antecedent to Mrs. Pollock." I think he said, "that none worth growing existed previous to the introduction of this variety."

"M." is decidedly in error with regard to the origin of Italia Unita. That variety was produced between a dark-zoned seedling of my own, and a Silver Tricolor sort named Rainbow also raised by myself. Rainbow was produced between Cerise Unique and Attraction, and both the last-named varieties were, I believe, raised by Mr. Kinghorn; and the last-named (Attraction) was, I believe, the first Silver Tricolor Pelargonium produced. I have never once used Burning Bush for the purpose of breeding. I am inclined to think that there exist physiological reasons for doubting the fact of a golden-margined variety producing a silver-margined sport, but possibly I may be wrong in this supposition; but at all events the fact requires confirmation. In the *Gardeners' Chronicle* of last September I gave the pedigree of Pelargonium Mrs. Pollock, which your correspondent "M." and other readers may not have seen, so I will quote from a copy of my letter for their information:—"The seed-bearing parent of Mrs. Pollock was a variety called Emperor of the French, and the pollen parent Gold Pheasant. The seed parent of Gold Pheasant was also Emperor of the French, and the pollen parent Golden Tom Thumb. The seed parent of Golden Tom Thumb was an old variety called Cottage Maid, and the pollen parent Golden Chain." The seed parent of Emperor of the French was Cerise Unique, and the pollen parent was Attraction. The result of this cross was three distinct varieties produced on one plant—viz., Emperor of the French, Empress of the French (a marbled-stemmed variety like Cerise Unique), and the Silver Tricolor variety called Rainbow.—P. Grieve.

The fact of being a near neighbour of Mr. Grieve for the last dozen years enables me to write with some authority on the subject. There can be no question that to him belongs the rare merit of originating most of the best varieties, and also of having anticipated their production. His object from the first, as frequently explained to myself and other friends, was twofold—to enlarge the size, and impart greater stamina to Golden Chain, and by an intermixture of blood between Golden Chain and the Horseshoe varieties, to obtain new combinations of colour. The appearance of Flower of the Day, and other Silver-leaved sorts, turned his attention to the subject. By crossing these with Zonals, and obtaining a pink zone, he was easily led, as described by himself at page 275, to believe in the possibility of producing Golden Tricolors; to secure this object it seemed only necessary to pour golden instead silver blood into the dark-leaved Zonals.

Such was Mr. Grieve's theory years ago, and I am not aware that he has ever swerved a hair's breadth from it since. The results are before the world in such splendid varieties as Mrs. Pollock, Lucy Grieve, Lady Cullum, Mrs. Grieve, Mrs. Beuyon, &c. It matters little to the establishment of the point of designed production, whether Mr. Grieve's views upon the effect of mixing certain colours are scientifically correct or not. It is sufficient here to prove that he had a theory, that that theory, right or wrong, aimed at a definite object—the production of Golden Tricolors, and that his practice compassed that object. Beginning with Golden Chain and the best Zonal at command, and then choosing the pollen of his own best seedlings as the magic brush with which he has painted, he has succeeded in originating and fixing more and finer colours on, in, or about Pelargonium leaves than any other grower of whom we have heard.

The difficulty of fixing the whereabouts of the colours leads me to state that I think both "M." and Mr. Grieve treat the general question of colour rather too mechanically. They assume throughout that it is a substance, thus taking it for granted that it is a quality inherent in bodies. This much cannot be said to have been proven. Colour may be an optical phenomenon—a matter entirely between the light of the sun, a given surface, and the eye of the beholder—a question of absorption, reflection, angles, or speed of different rays of light, and not one of physical structure.

Or, assuming that colour is a substance, it is obvious that it cannot be laid on living surfaces, such as leaves or flowers, as the artist spreads his colours on his palette, or the experimentalist evolves different hues, by placing the primary colours in certain relationships to each other. We must not overlook the disturbing power of vitality. Life is a fortress too high for the dwarfed ladders of our knowledge to scale, too strong for our powers to carry by assault. We only know that it is full of beauty, power, and mystery, and that it is undermined in all directions by disturbing forces that baffle our wisdom and defy our strength. Two of these forces that probably exert as great, or a greater, influence on colour than any mere mechanical depositions of tissue, coloured or otherwise, are chemical action and vital force.

Each plant is a miniature laboratory; by the intermixture of salts, acids, and alkalies, plants probably manufacture their own paint, as well as elaborate their inward secretions. Light handles the brush, but the paint, if produced at all, is most likely home-made within the plant itself. A familiar instance of this chemical paint-making is seen in the application of alum or steel filings to Hydrangeas. It changes the colour of the flowers from pink to blue. Doubtless this power which comes to the surface in this instance, is a powerful though hidden colourist in myriads of other cases.

Then there is the vital force. Its power, like its Author, seems omnipotent. Perhaps it does all the colouring. How else shall we account for the capriciousness of its distribution, or the regularity of its arrangement, or the sharpness of its limits? Adverting only to the last, what peculiarity of structure or chemical action will explain our inability to originate a blue Rose or Dahlia? Or if it be contended that blue being a primary colour, no combination of other colours can produce it, and therefore we fail, then I fall back upon the extraordinary fact adverted to by Mr. Grieve—that he has

hitherto been unable to obtain a cross between two such closely related classes as the Golden and Silver Tricolor Pelargoniums. Whence this repugnance to intermarry? The vegetable kingdom abounds with such examples, and it seems well nigh impossible to account for them unless on the hypothesis that vegetable like animal life is endowed with some magic power analogous to our sympathies and antipathies. On such a vitally important matter as the perpetuation of itself in an altered form, condition, or colour, the *will* of the plant, as imprinted on the laws of its life, has to be consulted and obeyed. The vital force resents violence, and limits the operations of the hybridist by the strong arm of unyielding law—keeping him inside its own closely defined lines of consanguinity or affinity. If such a power is exercised—and no one can prove that it is not—on the origin of species and varieties, it is probably also put forth in the secretion, rejection, or arrangement of colouring matter, supposing colour to be a quality of bodies, or in the selection or rejection of particular rays of light presuming that it is not. In either case it seems almost impossible to conceive the colouring being so exquisitely laid on, or made to appear as if it were, without the presiding skill and matchless energy of the vital force.

Mechanical colourists may reply that structure is also the result of the same energy, and that in contending that colour is chiefly dependent on the disposition of separate layers of matter, they neither ignore its existence nor seek to curtail its power. But there is a wide distinction between growth and colour, else the two would probably not only be co-extensive, which they may be said to be now, but all colours would probably be alike wherever there was identity of structure.

Neither is it necessary to enlarge upon the influence of light upon colour. This is well known, and is accepted as the basis of all true theories upon the subject. I believe, however, that just as the sun's rays in their entirety produce white or colourless light, so this light in an unbroken state naturally produces green colour. Resolve the sun's rays into their original elements by passing them through natural or artificial prisms, and we have the glorious hues of the rainbow. Break up light by the mechanical media, chemical power, or vital force of plants, or endow them with a natural power of selection of sunbeams, and the result probably is variegation. And just as the rainbow is not the product of a coat of paint on the sky, so brilliant hues in plants may not originate in a layer of colour on their leaves. Both alike may arise from the disintegration of light, if I may so express it, and not from the introduction of new matter. So far I agree with "M.," that variegation is not the addition of a new colour, but the subtraction or elimination of more or less of other tints. It is not a question of putting anything fresh in, but of bringing something old out. It removes, it may be, a layer of matter like a pigment from an artist's colour-box, or takes out part of a sunbeam from its shining sheath, and the result in either case would probably be identical—the exhibition of a new colour. The pencil of the hybridist, then, is less the brush of the artist than of the eliminor; his mission is the removal of overlying matter, so that the great primary colours, red, yellow, and blue of the grand old master Nature may be brought out in their distinctive clearness. Red and yellow have already been separated; can blue also be made to stand alone? It is probable that it may. Earnest efforts are being put forth in this direction, and when the theory of elimination is better understood, greater success will doubtless attend them.

Nature seems to favour the hybridist. New colours once produced have a tendency not only to perpetuate but to intensify themselves. Probably this arises from the fact that not only are different rays of light endowed with distinct functions, but their energy is strongly influenced by the colour of their transmitting media. By such means the chemical power of the sun is probably exerted on behalf of the hybridiser. It works to remove more of the green and expose brighter colours, to break up Nature's mixture, and resolve it into its original elments. It is a matter of actual fact that Mr. Grieve has gone on from good to better, until he has approached towards perfection in yellows and reds.

Beginning with Golden Chain, the following varieties show the progressive development of colour like the ascending steps of a ladder—Gold Pheasant, Mrs. Pollock, Lucy Grieve, Lady Cullum, and Mrs. Grieve, the best of all. Neither does he yet despair of a blue. For this, however, I believe he will have to appeal more to the vital principle and the distintegration or separation theory, and less to the mechanical induction of colour. Otherwise I, who have hitherto contented myself with carefully noting, occasionally chronicling, and always rejoicing in his well-merited success, may appear as a close competitor for the blue ribbon.—D. T. Fish, *Hardwicke*.

CYCLAMEN PERSICUM CULTURE.

I enclose for your inspection leaves and blooms of Cyclamen persicum. The plants have been in flower from last Christmas, but are now just over. It ought to be a plant for the million, but strange to state, it seems to be one of the most neglected, yet one of the most easy to grow.

The treatment given here is to sow the seed in February. When the seedlings are large enough to handle they are pricked out in frames, then into small 60-pots, giving the last shift into large 60's, which are quite large enough for the first year.

From the time the seed is up, the plants should be kept in a moist, growing temperature, but by no means with a confined atmosphere, and at the end of ten or twelve months fine blooming plants can be had.

I kept a three-year-old corm from seed. It commenced blooming in the beginning of February, and continued producing flowers nearly to the present time, and not less than from seventy to ninety blooms expanded at one time. I merely state this to show its usefulness either for in-door decoration, bouquets, or cut flowers. The effect of forty or fifty good plants in a conservatory in the three worst months of the year can be easily imagined.

After the blooming period the plants are not allowed to become dry at any time of the year, or to be exposed to the mercy of the weather during the summer months. When they show signs of starting, they are repotted, but without destroying any of the roots, and as little as possible of the old soil is removed. They are kept in a cool house with a free circulation of air.—G. E., *Strawberry Hill*.

[The specimens enclosed were as fine as any we ever saw. The leaves measured nearly 4½ inches across; the petals were 1½ inch in length; and the whole were robust examples of perfect health and vigour.—Eds.]

EARLY TULIPS.

Although the Early Tulips are of great value for the spring decoration of conservatories, as well as for enlivening the flower garden before the summer occupants of the beds are planted out, and are indeed largely grown for both purposes, yet, considering their brilliant colours, their easy culture, and the cheap rate at which the bulbs can be purchased, it is surprising that they are not still more extensively cultivated. At present Hyde Park furnishes a magnificent example of the effect which they produce in large masses. There, extending for several hundred yards from Stanhope Gate, on the Park Lane side, towards the Marble Arch, is a series of beds which Mr. Mann, the Superintendent of the Park, has filled with these Tulips. Ten beds, all 25 feet long by 8½ wide, each containing one variety only, alone afford such a display of Tulips as it may safely be averred has never before been witnessed near London. All these beds have an edging of Arabis alpina, bearing a profusion of its white flowers, and within this a line of Crocuses, now over, surrounding a mass of Tulips, everywhere uniform in height, and without a blank. The varieties are Rex Rubrorum, double red; Tournesol, red and yellow; La Candeur, double white; Yellow Prince, single yellow, and White Pottebakker. Waterloo, single red, was also planted, but came into flower too soon. In the ten principal beds, and in others, altogether about 20,000 Tulips were planted, and although the arrangement of the colours is capable of some improvement, the very successful manner in which the bulbs have bloomed is most creditable both to Mr. Mann, and to Messrs. Gibbs & Co., of Down Street, Piccadilly, who supplied them. In the panels, besides Tulips and Hyacinths, the latter nearly over, there are Polyanthuses, the white-blossomed Iberis sempervirens, Alyssum saxatile compactum, Saponaria calabrica, and some autumn-sown annuals in bloom. It may also be here remarked that a number of Plane trees, some with trunks upwards of a yard in circumference, have been moved back from 15 to 20 feet, to make room for the much-needed widening of Park Lane, and, with a single exception, without injury to the trees.

Messrs. E. G. Henderson, of the Wellington Road Nurseries, have also a very fine collection in bloom, which is well worthy of inspection. It fills some forty beds, consists of several

thonsands of bulbs, and is more brilliant than even the Hyde Park display; but the general effect is not so good, owing to the vast number of varieties planted, and which do not correspond so exactly in height as is desirable. Of these the most noticeable are Sultana, crimson; Violacea purpurea, violet purple, pretty but small; Royal Queen, dwarf, deep crimson; Thomas Moore, orange buff; Silver Standard, crimson and white; Golden Prince, yellow; Bride of Haarlem, cherry-coloured feathers on a white ground; Cottage Maid, white, feathered with rose; Feu d'Anvers, scarlet, resembling Vermilion Brilliant in colour, but of dwarfer habit; Tournesol, double; Golden Prince, one of the best of yellows; Queen Victoria, white, fine cup; Couleur Cardinal, fiery scarlet; La Plaisante, purplish puce; Brutus, bright orange scarlet, with a narrow yellow border; Duc d'Autriche, scarlet, with a broad yellow belt; Wouverman, large, violet purple; La Majesteuse, deep crimson, with a narrow white edging; Duchesse de Parma, large and very fine, red and yellow; Proserpine, rather past its best, but still a fine rose; and Rosenkroon, crimson.

Independently of the Tulips, Messrs. Henderson's large houseful of Tricolor Pelargoniums is a sight of matchless beauty, and from the multitude of varieties which it contains in all stages of development, replete with interest.

In the Inner Temple Gardens Mr. Broome, less advantageously situated as regards London smoke, has also several beds of early Tulips in good bloom.

ROYAL HORTICULTURAL SOCIETY.

Weekly Show, *May 4th.*—The first of the Saturday shows to be held during this month and next took place to-day, and the collection brought together was a very good one. First, second, and third prizes were offered for collections of three Pelargoniums (Amateurs); of six plants, miscellaneous (Amateurs); of three Azaleas (Amateurs); of miscellaneous cut flowers, arranged in a basket (Open); and for the best exhibition of fruit (Open).

In the collection of three Pelargoniums the first prize was awarded to Mr. A. Wilkie, gardener, Oak Lodge, Addison Road, Kensington, and the second to Mr. W. Bartlett, Shaftesbury Road, Hammersmith. For six plants, miscellaneous, Mr. A. Wilkie was awarded the first prize for a fine plant of Dendrobium nobile, Azalea crispiflora, Erica candidissima, &c. Mr. W. Bartlett was awarded the second prize and also an extra prize for a collection of plants. There was only one exhibitor in the class for Azaleas—viz., Mr. A. Wilkie, who was awarded a first prize for Azalea variegata, Marie Vervaene, and Coronata. In the miscellaneous collection of cut flowers Mr. W. Earley, gardener to F. Pryor, Esq., Digswell, obtained the first prize, Mr. W. Bartlett the second, and the third was given to Mr. A. Wilkie. Mr. W. Lynn, gardener to Lord Boston, Hedsor Gardens, Maidenhead, gained the first prize for fruit. His collection consisted of a dish of Figs, a dish of fine Sir Charles Napier Strawberries, and a collection of Black Hamburgh Grapes, &c. Mr. W. Earley, Digswell, obtained the second prize, and was also awarded an extra prize for a collection of vegetables. An extra prize was also given to Mr. Morgan, Ball's Park, Hereford, for a dish of Keens' Seedling Strawberries and a box of cut Roses.

An interesting collection of plants from Chiswick, consisting of Roses, Lily of the Valley, Azaleas, Begonias, Pelargoniums, &c., made a very pretty exhibition.

Special Prize Show—*May 7th.*—Although nominally only one of the minor Shows of the Society, this was in reality an extensive and varied exhibition, filling the conservatory and the greater part of the two adjoining arcades, and from the large number of novelties produced it was possessed of more than usual interest; the day, too, was one of the finest we have had this season.

Class 1 was for a special prize offered by the Duke of Buccleuch, the President, for the nine best cultivated Azaleas, which was taken by Messrs. Veitch & Sons, notwithstanding their having so many of their finest specimens of these and other plants at the Paris Exhibition, where the firm has also taken the first prize for Azaleas. Those shown at South Kensington, which alone it is our province to notice here, were magnificent specimens, standing from 6 to 8 feet high, and the largest was 7 feet in diameter at the base, whilst the whole were in profuse bloom, with here and there a few fresh green leaves peeping forth and giving relief to the blaze of colour. The varieties were—Præstantissima, salmon rose; Extrani, rosy crimson; Criterion; Roi Leopold; Trotteriana, magenta crimson, splendid; Carnea superba, salmon rose; Magnifica, white; Dilecta, rose; and Chelsoni, orange scarlet.

In Class 2, for the best nine Roses in pots, the prize was also offered by the Duke of Buccleuch, and was taken by Messrs. Lane & Son, with beautiful examples of Souvenir d'un Ami, Vicomtesse de Cazes, yellow, Chénédolé, Anna Alexieff, Charles Lawson, Paul Perras, Gloire de Dijon, Victor Verdier, and Coupe d'Hébé. Mr. William Paul received an extra prize for another beautiful collection, of which the star was a most graceful plant of Souvenir d'un Ami in splendid bloom, with remarkably fine examples of Anna Alexieff, Paul Perras, Paul Delameilleray, Victor Verdier, Madame C. Wood, Comtesse de Chabrillant, Madame de St. Joseph, and President. Messrs. Lane and Son also contributed several young plants of Maréchal Niel.

Prizes were also offered by Mr. G. F. Wilson, F.R.S., and the Duke of Buccleuch, respectively for the best twenty new Roses, and the best six Zonal Pelargoniums, but no competitors came forward to claim either.

Mr. W. Wilson Saunders offered prizes for the best ten Orchids and the best six Show Pelargoniums. The former was taken by Mr. Penny, gardener to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, with Phalænopsis grandiflora with three fine spikes of large flowers, Cypripedium villosam in fine bloom, Saccolabium curvifolium, and Lælia cinnabarina, each with four spikes; Dendrobium primulinum, with seven spikes; Vanda suavis, V. tricolor superba, the yellow and brown Oncidium sarcodes, and the Fox-brush Aërides.

Mr. Saunders's prize for Pelargoniums was taken by Mr. Turner, of Slough, with finely-bloomed plants of Patroness, Beacon, Desdemona, Mdlle. Patti, Empress Eugénie, and Rose Celestial; and Mr. Wiggins received an extra prize for half a dozen plants which have been noticed in a previous report; Roseum was very showy.

Major R. Trevor Clarke offered a prize for the best collection of fragrant-blossomed plants, but only one exhibitor came forward—Mr. J. Reeves, jun., Campden Grove Nursery, Kensington, and his plants were small, though numerous enough. They consisted of Mignonette, Stocks, Gardenia florida, Ixora acuminata, Stephanotis floribunda, Daphnes, Boronia serrulata, Nerium splendens, Orange tree, Acacia armata, Jasminum ligustrifolium, Heliotrope, Petunia, Rose, Lily of the Valley, and three or four other plants.

New plants, as already remarked, constituted a leading feature, being shown in great numbers and beauty. In Class 8, for the best six sent out in 1865 and 1866, Messrs. Veitch were first with Primula cortusoides amœna, with rich rosy purple flowers as large as a two-shilling piece; the beautiful Maranta roseo-picta, with deep green foliage, crimson midribs, and a zone of the same colour, the under side of the leaf being reddish purple; handsome specimens of Maranta Veitchii, Verschaffeltia splendida, Dieffenbachia Weirii, and Begonia Pearcei with rich velvety dark green leaves veined with pale green. Mr. Bull was second with Maranta roseo-picta, Verschaffeltia splendida, the silvery-veined Fittonia argyroneura, the rose-spotted Bertolonia guttata, Zamia villosa, a handsome graceful species, and Anthurium regale, with large Caladium-like leaves of a bronzy green colour prominently veined with pale green, a very effective species. Mr. Williams, of Holloway, sent the Variegated New Zealand Flax, Dieffenbachia Weirii, Dracæna sanguinea, Maranta Lindeni, a pretty Gleichenia with the under side of the fronds silvery, and a panful of Chrysanthemum Sensation, which, in general appearance, would form a good substitute for Lady Plymouth Pelargonium.

In Class 9, for the best six plants sent out in the present year, Messrs. Veitch were again first with Sanchezia nobilis variegata, with large obovate leaves with yellow bands radiating from a yellow midrib, a very handsome ornamental-foliaged plant; Coleus Veitchii, from New Caledonia, with dark chocolate leaves edged with bright green; Panicum variegatum (also from New Caledonia), with rose, white, and green foliage, and which will probably make a fine basket plant; Dieffenbachia Pearcei, with large leaves having pale green and silvery markings; Hypocyrta brevicalyx, from Ecuador, with nearly orbicular silvery-veined leaves; and Lomaria ciliata, from New Caledonia. Mr. Bull was second with two Peruvian Dichorisandras, named D. mosaica, with dark green leaves, lined transversely with pale green, and brownish purple on the under side; and D. undata, with undulated dark green leaves, longitudinally banded with pale green; Agave macrocantha, with glaucous pale green leaves edged with bold brown spines; the handsome and robust-looking Adiantum Lindeni; Maranta illustris; and Bignonia ornata, from Rio Negro, with broad-lanceolate leaves, which when young are of a bronzy hue with a rosy band along the midrib, but which becomes silvery in the older foliage, which is elsewhere of a deep green colour.

In Class 10, for the best new plant shown for the first time in flower, the prize was taken by Mr. Bull, with Dalechampia Roezliana rosea, with bright rose-coloured bracts. In the same class a scarlet-flowered Begonia, from Bolivia, shown by Messrs. Veitch, and which promises to be a great acquisition, received a first-class certificate; a similar award was made to Mr. Bull, for Ptychosperma regalis, a handsome East Indian Palm.

Class 11, was for the best new plant with ornamental foliage, and in this the prize was taken by Messrs. Veitch, with a species of Alocasia, from the East Indies, having nearly heart-shaped bright green leaves, with dark chocolate blotches in compartments divided by the veins.

In Class 12, for the best new garden seedling, the prize was also taken by Messrs. Veitch with a pretty hybrid Cattleya.

Messrs. Veitch, in addition to their exhibitions in the above classes, contributed an extensive collection of recently introduced and rare plants, among which were Anthurium Scherzerianum with three splendid spathes, Hippeastrum equestre, the beautiful Bertolonias margaritacea and guttata, the red-veined Gymnostachys Pearcei, a panful of Davallia alpina, the handsome Retinospora plumosa, Miconia peruviana, with large and beautiful Sphærogyne-like foliage, Palicourea discolor, Maranta Veitchii, and Acalypha tricolor with coppery

foliage. From Mr. Bull came a similar collection, including Terminalia elegans, Dieffenbachia Weirii, the silvery-mottled Habenaria margaritacea, Eranthemum igneum, with deep green leaves and bold orange veins, Rhopala aureum, having the stem and leafstalks covered with orange down, Bertolonias, Anæctochilus petola marmorea, Dæmonorops elegans, a handsome-looking plant for table decoration; several new Ferns, &c.

Of fine-foliaged and flowering plants several remarkably fine mixed groups were exhibited. That from Messrs. Lee, to which the first prize was awarded in Class 13, consisted of a large and very handsome specimen of Alocasia metallica, Rhopala corcovadense, Croton variegatum, Theophrasta imperialis, Dicksonia antarctica, with a thick trunk and very graceful head, Pandanus elegantissimus, very large and fine, one of the finest specimens of Genetyllis tulipiferum which we have ever seen; Medinilla magnifica, with about sixteen splendid panicles of bloom; white Azalea Lecana, Erica Cavendishii, Polygala cordifolia, and the white-flowered Pimelea spectabilis. Mr. Williams, who was second, had remarkably fine specimens of Latania borbonica, Variegated Aloe-leaved Yucca, Pandanus elegantissimus, and Alocasia metallica; also Azaleas, Eriostemon pulchellum, Erica Cavendishii, and other flowering plants. An extra prize was awarded to Mr. Fairbairn, gardener to the Duke of Northumberland, Sion who had a noble plant of Seaforthia robusta, large specimens of Alocasia zebrina, and macrorhiza variegata, Phalænopsis grandiflora, Vandas, &c. Similar awards were made to Mr. Wilkie and Mr. Gell.

Messrs. Lee had also a first prize for the best twelve stove and greenhouse plants in flower. These comprised Azaleas, an Eriostemon, Ixora coccinea, Acrophyllum venosum, very pretty; Boronia pinnata, the lilac-flowered Tetratheca ericæfolia, Genetyllis fuchsioides, Heaths, and Aphelexis.

Of Cape Heaths, shown in Class 15, rather small specimens came from Mr. Wilkie, who was the only exhibitor; and in Class 16, for exotic Ferns in 12-inch pots, Mr. Williams was first with good examples of Dicksonia antarctica, Alsophilas, Gleichenias, a fine Platycerium grande, Adiantum Feei, Todea superba, and others.

Of miscellaneous subjects Messrs. Veitch contributed a charming group, consisting of Azaleas Stella, Marie Vervaene, and Holfordii in splendid bloom; the white-flowered Rhododendron Sesterianum, Hoteia japonica, Clianthus Dampieri, Coleus Veitchii, and the variegated-leaved variety of Hemerocallis fulva. Messrs. Lane had a pretty group of Azaleas; Mr. Burley, of Bayswater, a group of Palms and Dracænas, for which he received an extra prize; Mr. William Paul, a box of cut-blooms of spring and early summer flowering shrubs; and Mr. Dean, Ealing, cut blooms of double Tulips. Mr. Anderson, Meadow Bank, and Mr. Sherratt, gardener to J. Bateman, Esq., Knypersley, also sent cut Orchids.

Floral Committee.—The Special Exhibition for prizes offered by members of the Council, and supported by prizes from the Society, must be considered a great success. The duties of the Floral Committee were, as we always wish them to be, somewhat heavy, and the awards were numerous. Mr. Muir, gardener to Sir P. M. de Grey Egerton, Bart., M.P., received a first-class certificate for Epidendrum spathicum cnemidophorum, with three splendid spikes of flowers. Messrs. Low, Clapton, exhibited eighty specimens of a beautiful old Orchid with many varieties, Cattleya citrina, much admired, and for which a special certificate was awarded; Odontoglossum citrosmum album, which received a first-class certificate, and a collection of beautiful Orchids, for which also a special certificate was awarded. Mr. Dean, Ealing, sent a variety of Cabbage, Brassica oleracea, with variegated leaves. Mr. Turner exhibited several seedling Alpine Auriculas of first-rate quality, many of them rather past their prime: Bertha, a dark shaded purple, had a first-class certificate; Novelty, a paler shade, a second class one. Mr. Turner also exhibited several seedling Fancy Pelargoniums. Maid Marian, a pleasing variety, not quite perfect in form, had a second-class certificate; Belle of the Season, a perfect flower, one of the first class; Pink of Perfection, a splendid rosy carmine, a first-class certificate; Marmion, deep violet rose, one of the second class; Perfection, a first-class, and Brightness, a charming variety, a like award. Messrs. Rollisson, Tooting, had for Erica Turbullii, a first-class certificate, and one of the second class for Erica tubiformis. Mr. Turner, with his usual liberality, decapitated a large collection of his first-rate Tulips, which were awarded a special certificate.

From Messrs. Downie & Co. came Nosegay Pelargonium Rose Stella, a plant of great merit, dwarf in habit, colour distinct, a very useful bedding plant, quite worthy of the type Stella, and which was awarded a first-class certificate. Mr. William Paul sent a large collection of seedling Zonal Nosegay Pelargoniums, many of them of great merit, but the specimens were too small for any decision as to merits. Waltham Nosegay, in every point to be commended, was awarded a first-class certificate; Dr. Hogg, a darker shade than Amy Hogg, an excellent variety, was awarded a first-class certificate. He also sent Silver Wing, Ossian; of the Tricolor section, Red Admiral, Rouge et Noir, California, Variegated Cybister, and many others. An Ulmus from Japan, also shown by Mr. W. Paul, and very distinct, was awarded a first-class certificate. Iberis carnosa, a very useful dwarf plant for rockwork, which came from Messrs. Backhouse, of York, also had a first-class certificate. Mr. Williams, Paradise Nursery, Holloway, sent Azalea Reine des Roses, splendid in colour, but without outline and form; also Amaryllis aurantiacum. From Mr. Barnes, Camberwell, came Azalea Her Majesty, a fine flower, which had received a first-class certificate on a former occasion. Mr. Watson, St. Alban's, exhibited several seedling Zonal Pelargoniums; among the Tricolors, Mrs. Dix and Miss Watson both retained their good character. Excelsior, Annie Merry, and Enchantress must be seen again. Mr. Richards, gardener to Lord Londesborough sent a Saccolabium curvifolium of a good variety, which was awarded a special certificate. The new plants exhibited in classes 10, 11, and 12 were awarded the following certificates:—Messrs. Veitch, Cattleya, hybrid variety, first-class; Alocasia species, very beautiful, dark-spotted leaf, first-class; Begonia species, with very singular scarlet flowers of a new form, first-class. Mr. Bull, Ptychosperma regalis, first-class certificate. Mr. Bull also exhibited a bright rose seedling Azalea Charmer, beautiful in colour but deficient in quality. Many other specimens were exhibited which have been previously noticed, and maintain the good characters assigned them.

Fruit Committee.—Mr. Turner, of Slough, received a special certificate for three very well ripened bunches of Muscat Grapes; also for three bunches of Black Hamburgh, as black as Sloes, and covered with a fine bloom. Mr. Merrett, Battersea, sent a box of Sir Charles Napier Strawberry, very fine in flavour, and had a special certificate for six plants of the same in pots, loaded with fine fruit. A similar award was made to Mr. Fairbairn, Sion, for seven pots of Keens' Seedling, likewise bearing an abundance of finely-ripened fruit. Mr. Gardiner, Weston House, sent a dish of Peaches, and Mr. Earley, Digswell, Sturmer Pippin, Sam Young, and Cockle Pippin Apples in good preservation. From the same exhibitor came fine heads of Williams' Alexandra Broccoli, which received a special certificate, and from Mr. R. Dean, Ealing, selected Stanstead Park Lettuce, a most excellent Cabbage variety.

General Meeting.—J. Bateman, Esq., F.R.S., in the chair. The business was confined to the election of sixteen new Fellows and the admission into union with the Society of the Stour Valley Horticultural Society, Ludlow Horticultural Society, Bodmin Cottage Gardening Society, and Basingstoke Horticultural Society.

ENTOMOLOGICAL SOCIETY'S MEETING.

The April meeting of this Society was presided over by Sir John Lubbock, F.R.S., the President.

Mr. S. Stevens exhibited several specimens of the rare and very remarkable Beetle Dumaster Blaptoides (belonging to the family Carabidæ), from Japan. Mr. Pascoe exhibited and described a new Longicorn Beetle from Greece, under the name of Toxotus Lacordairei.

Mr. F. Smith exhibited a fine British species of Ichneumonidæ (Rhyssa persuasoria), which appeared to have worked its long ovipositor (bradawl fashion), through a piece of Fir wood in quest of the larva of Sirex juvencus, on which it is parasitic, part of the ovipositor being left in the wood. He had always supposed that the Ichneumon inserted its ovipositor down the hollow made by the Sirex larva instead of making a hole for itself. The late Mr. Edward Doubleday had, however, told him that he had seen in North America many female specimens of Pelecinus, an allied genus, with their long abdomens inserted into the stem of a tree, apparently for the purpose of egg-laying; unable to extract the abdomen again, they had perished *in situ*. Mr. Bates inquired whether an ovipositor was not a modification of an abdominal segment. Mr. Smith, on the contrary, considered it to represent the aculeus; and Mr. Wallace suggested that the sting was a modification of the ovipositor, egg-laying being the primary use, defence the secondary and acquired use.

Mr. G. Saunders exhibited a number of Podurida, minute spring-tailed insects, found on the surface of pools left on the melting of the snow in the north of Yorkshire.

Professor Westwood communicated a paper entitled "A Decade of new Mantispedæ in the Oxford Museum."

MR. DIXON'S TREATISE ON TRICOLOR ZONAL PELARGONIUMS.

Mr. Dixon's small pamphlet, of which you in your last number have given so able and just a review, is one which at the present moment, when the Tricolor Zonals are receiving so much attention from both practical horticulturists and amateurs, will be found extremely useful. The simplicity and conciseness of the several hints suggested are a great recommendation to this treatise; and I am certain that lady amateurs especially will find it not only of great assistance to themselves in their interesting experiments, but that it will enable every admirer of these splendid garden ornaments who had practically little knowledge on the subject, to give ample and safe directions to the gardener who may be required to carry out his or her desires. There are suggestions in this little book worthy of some consideration; and although to the practised skill of the horticulturist no very new idea may be suggested, it is a book well worthy of a shilling being spent for its perusal.—J. D., A Constant Reader.

VINE BORDERS.

There has been so much discussion lately in your pages, respecting the making and management of Vine borders, that it may be thought presumption in an amateur of only a few years' experience to put in a word among such skilful growers.

I cannot help thinking that Vine borders, as a rule, are too much enriched, which is, I think, not only wasteful but positively deleterious, as productive of coarse long-jointed shoots. My present Vines were planted in March, 1865, inside a house 30 feet by 16, the front built on arches, and with an outside border of lime-rubbish and common garden soil, about 15 feet wide. The inside border was made with rotten horse-manure, bones, and lime-rubbish, and a small quantity of charcoal added to about four times the quantity of common soil, and I have occasionally given waterings of weak liquid manure, such as guano water and diluted chamber lye. The outside border was cropped the first year with early Potatoes, and last autumn it was dug up and a small quantity of horse-manure pointed in. The roots were found to have gone through, but were cut back.

The house is in two divisions. In one I have a Muscat of Alexandria, a Bowood Muscat, a Muscat Hamburgh, and a Lady Downe's. In the other, or cooler compartment, are a Lady Downe's, a Purple Constantia, two Black Hamburghs, and one Royal Muscadine. I have been firing a little since the end of February, but ceased doing so in the cooler compartment at the end of March. In the warmer division the Muscat Hamburgh bunches are 10 inches long and largely shouldered. the berries the size of large peas; the others are rather smaller. In the cooler division the Grapes are just beginning to set. I pinch very severely at the first joint beyond the fruit, and afterwards at the second leaf, and the shoots are sturdy and short-jointed, and the leaves large, often 10 inches across each way, every eye showing fruit, though I only allow about seven or eight bunches this year on a Vine. I give more air than many, as I think it conduces much to flavour, which I prefer to size, and next month (May), I intend to have the back shutters partly open all night to prevent early scorching, my aspect being south-east.

Some of my neighbours have covered their borders with a thick coating of long dung, and their shoots are gross and long-jointed, with puny flower-stalks six or seven joints from the stem; but mine have only four or five joints, and when in full flower are only 5 or 6 inches from the stem. I do not believe that Vines require such constant dressings of rich manure as many apply to them. They do not get them in the foreign vineyards to anything like the extent; and other fruit trees, when established, are left to themselves, and bear large crops of fruit, as do Vines on walls in good aspects and climates, their roots running under gravel walks and in all kinds of rough soil, and only wanting good drainage and plenty of sun heat.—J. C. Barnham.

SORGHUM TARTARICUM.

We have read the very disparaging notice of the above novelty in a late number of the Journal with much surprise, and hasten most willingly to satisfy your correspondent, "W. P.," in last week's issue, as to our position respecting it, although our advertisement, if correctly read, contains abundant explanation.

Our house has long been celebrated for introducing novelties of the vegetable world, and we are compelled in most instances (excepting when of our own raising), to rely upon the description given us by the raiser or introducer, as the case may be; but at the same time we specially avoid personally guaranteeing the excellence of any novelty until we have proved it at our trial grounds. In this case we intimated most distinctly that the description is "as given us;" and in the advertisement of S. tartaricum we say, "that we have not yet proved its qualities," followed by a verbatim description from our correspondent, whose testimony we are by no means disposed to question.

A doubt has been expressed as to S. tartaricum possessing sufficient hardiness of constitution to thoroughly ripen its seed in this variable climate; but as our correspondent assures us it is "quite hardy," we have every reason to believe the variety as offered by us has not been sufficiently tried in this country to warrant its condemnation, and we suspect the reports to which we allude emanate entirely from hearsay evidence, or from a trial of an inferior kind of Sorghum incorrectly supposed to be synonymous with the sort in question.

We cannot, therefore, allow our correspondent's description to be disputed upon such unsatisfactory evidence; and as we have made a considerable sowing at our seed farms in Essex, besides distributing large quantities to our customers, we have no doubt the question of its adoption as an English cereal, or a valuable forage plant, will be effectually determined by this season's trial. We may add, that should it fail as a corn crop, it is reported to possess remarkable qualities as a forage plant, for which purpose the Sorghums generally have proved more or less adapted.—James Carter & Co.

PARIS UNIVERSAL EXHIBITION.

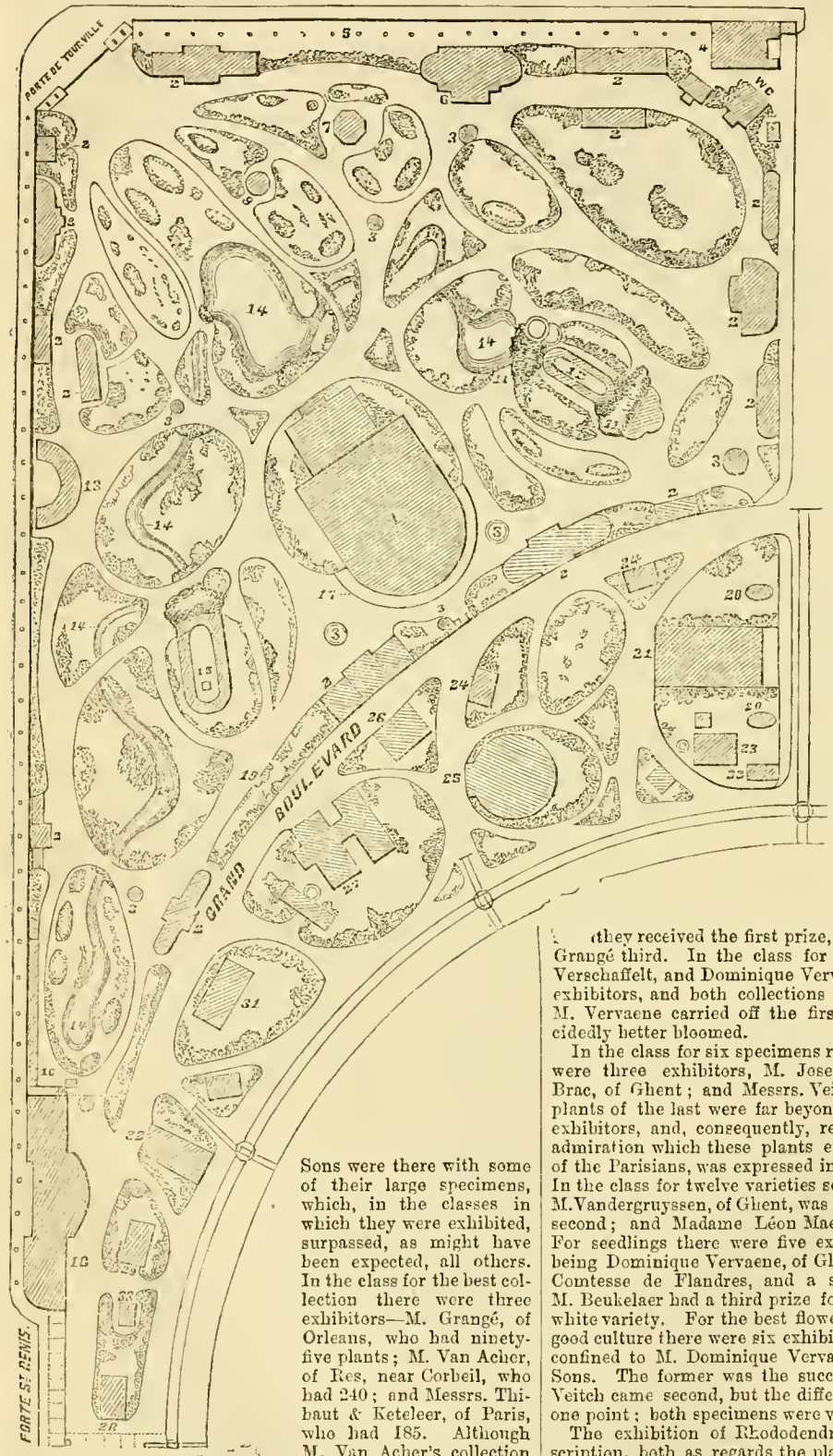
To those who have been accustomed to visit or to report on the flower shows in England, a visit to the horticultural portion of the Great French Industrial Exhibition will be attended with a singular mixture of perplexity and disappointment. Unlike the exhibitions we are accustomed to see in our own country, where all the subjects are gathered together in one, or, at least, in contiguous places, and the various collections in the same class are so placed that they can easily be compared, or serve to form groups that contribute pleasing effects in form and in colour, the French Exhibition is distributed over a large surface in detached glass houses and sheds without any apparent system, or without any attempt either to produce effect or to afford pleasure.

The horticultural part of the Exhibition occupies one of the four equal compartments of the park which surrounds the great building, and it is most skilfully and tastefully laid out, producing the finest landscape effects which undulating grounds, water, rockwork, grottoes, trees, and shrubs are capable of, and this upon a scale which affords ample scope to do justice to every feature that is represented. An idea of the manner in which this has been carried out will be obtained from the accompanying figure, which, while it represents the disposition of the ground, fails to convey any conception of the artistic beauty of the place. It will be seen from the figure that glass houses are distributed throughout the whole of this space, and it is in these houses that the various horticultural exhibitions take place, with the exception of the hardy ornamental trees and shrubs, which are arranged in groups, and contribute to the planted effects of the ground. Round the large conservatory, or Serre monumentale (1), the Conifers are arranged, in which class our enterprising countryman, Mr. Veitch, plays a prominent part, contending for and maintaining the honour and reputation of his country. Notwithstanding the great disadvantages of the long voyage by sea and land over which his collection of Conifers had to be transported, he nevertheless carried off at the second series the first prize. They are a beautiful lot, and whether the great beauty of the specimens or their commercial value is considered they are a valuable collection.

To enable us to deal with this subject systematically, we shall begin at that corner of the enclosure which is indicated by the "Galerie des Fruits et Legumes" (16). This "Galerie" is a long covered shed, about 50 feet long and 8 feet wide, a lean-to against a wall, and a long table running the whole length. The "Legumes et Fruits," the vegetables and fruits, that have hitherto been exhibited here, are not such as to attract any one from a great distance to see them. The season is yet too early for any such exhibitions to be attractive, and therefore our readers will not be astonished when we say that with the exception of a few withered Apples, some very unhappy-looking Oranges and Lemons, and some of those large specimens of Uvedale's St. Germain one sees in Covent Garden Market, and which appeared to be the worse for the repeated services they had already performed, there is really nothing to look at in the fruit way. Within these last few days a dozen or two pots of forced Strawberries have made their appearance, and do ample credit to the good cultivation of Mr. Charles Henry, of Bagneux. It appears, however, that this gallery is put to other uses than the exhibition of vegetables and fruits, the vacant space being filled during the last fortnight of April with cut blooms of Hyacinths and Tulips from Mr. Krelage, of Haarlem, and which, if he had seen them, were not likely to have excited great alarm in the mind of Mr. William Paul, who apparently will be permitted to retain the laurels he has already won for some time to come, against both Dutch and French growers at all events.

The third series of exhibitions commenced on the 1st inst.,

and will continue till the 14th, when the fourth series will commence. The first class consisted of Indian Azaleas and Rhododendrons. The former formed a very creditable exhibition, but the plants were not so large as we are accustomed to see at our London exhibitions, being rather of the kinds that may be grown in eight and nine-inch pots. Messrs. Veitch and



REFERENCES TO PLAN OF EXHIBITION.

1. Serre Monumentale.
2. Plant-houses.
3. Kiosks.
4. Police and Firemen.
5. Arboricultural Department.
6. Refreshments.
7. Orchestra.
8. Humming Birds.
9. Empress's Tent.
10. Office.
11. Grotto.
12. Marine Aquarium.
13. Botanical Diorama.
14. Lake and Ornamental Water.
15. Fresh-water Aquarium.
16. Fruit and Vegetables.
17. Horticultural Implements.
18. Post Office, Telegraph, Jury &c.
19. Rural Pavilion.

BELGIUM.

20. Statue.
21. Fine Arts.
22. Cloak-room.
23. Boilers.
24. Workmen.
25. Railway Plant.

NETHERLANDS.

26. Diamond-cutting.
31. Fine Arts.
32. Carriages.
33. Filters.

Sons were there with some of their large specimens, which, in the classes in which they were exhibited, surpassed, as might have been expected, all others. In the class for the best collection there were three exhibitors—M. Grangé, of Orleans, who had ninety-five plants; M. Van Acher, of Res, near Corbeil, who had 240; and Messrs. Thibaut & Keteleer, of Paris, who had 185. Although M. Van Acher's collection was the most numerous, that of Thibaut & Keteleer was so much superior to it, and the plants so much better bloomed, they received the first prize, M. Van Acher second, and M. Grangé third. In the class for fifty varieties, MM. Ambroise Verschaffelt, and Dominique Vervaene, of Ghent, were the only exhibitors, and both collections were highly meritorious; but M. Vervaene carried off the first prize, the plants being decidedly better bloomed.

In the class for six specimens remarkable for their size there were three exhibitors, M. Joseph Vervaene and M. Graet-Brac, of Ghent; and Messrs. Veitch & Sons, of London. The plants of the last were far beyond those of either of the other exhibitors, and, consequently, received the first prize. The admiration which these plants excited to the wondering eyes of the Parisians, was expressed in the most enthusiastic terms. In the class for twelve varieties sent into commerce since 1865, M. Vandergruyssen, of Ghent, was first; M. Dominique Vervaene second; and Madame Léon Maenhaut, all of Ghent, third. For seedlings there were five exhibitors, the successful ones being Dominique Vervaene, of Ghent, who had a first prize for Comtesse de Flandres, and a second for M. Barillet; and M. Beukelaer had a third prize for a double rose and a double white variety. For the best flowered specimen combined with good culture there were six exhibitors, but the competition was confined to M. Dominique Vervaene and Messrs. Veitch and Sons. The former was the successful exhibitor, and Messrs. Veitch came second, but the difference between them was only one point; both specimens were very handsome.

The exhibition of Rhododendrons was of a very poor description, both as regards the plants and the flowers. There was not in all the collections a single flower that would have passed muster at any meeting of the Floral Committee, and

one need not, therefore, occupy space in describing that which has no object of interest attaching to it.

The great stake of the day was in the New Plants, and the rivals were Messrs. Veitch, of Chelsea, and M. Linden, of Brussels, both the victors in many a hard-won fight. The first class was for collections of Stove Plants of recent introduction. In this Messrs. Veitch were the only exhibitors, and a finer or more interesting lot we never saw exhibited when the number is taken into consideration, there being no less than thirty plants in all. Among them were to be seen several of great novelty and interest, such as a Cinchonaceous plant with long broadly-lanceolate leaves, and with bright red midrib and veins, from Bolivia; a singular species of Begonia from Peru; a Bertolonia from Madagascar; a Drosera from the Cape of Good Hope; several species of Dracænas from the South Sea Islands; Crotons, and a new species of Dicksonia. There were also a fine specimen of Anthurium regale, Maranta roseo-picta, and Dieffenbachia gigantea. It was in Class 2 that the great rivalry took place. It was for six plants newly introduced, distinct. Messrs. Veitch and Mr. Linden each showed two collections. That on which the first prize was decided, Messrs. Veitch's, consisted of a new species of Philodendron; two new Dracænas, one beautifully variegated green and white, and named Dracæna regalis; the other the same colour as D. ferrea variegata, but with much larger and broader leaves, and named magnifica; a Croton, from New Hebrides, named C. Veitchii; Sanchezia nobilis variegata; and Aralia Veitchii, from New Caledonia. Mr. Linden had a new Commelinaceous plant which has leaves a yard long, and is said to produce flowers of azure blue; Bignonia ornata, from Rio Negro; the Dichorizandra mosaica which he exhibited at the International Exhibition of London in 1866; Maranta virginalis, Ficus dealbata, and Maranta princeps. The first prize was awarded to Mr. Linden, with 20 points; and the second to Mr. Veitch, with 19¾. The difference being so slight it may be thought, and was thought by many, that they should have been equal; but we believe it is a Perso-Median principle of the Imperial Commissioner, that no two things can be of equal value, not even a florin and a two-shilling piece, and, therefore, the Juries are not permitted to make equal awards. The second collection of Mr. Linden consisted of Hemerocallis nova, a green and white variegated variety, from Japau; Cyanophyllum spectandum; Dieffenbachia nobilis, a new species of Iresine, a new species of Spathiphyllum, and Echites rubrovenosa. Messrs. Veitch's second collection contained a species of Aralia, from New Caledonia; Dieffenbachia Pearcei, Coleus Veitchii, a beautiful striped new species of Pandanus, from New Hebrides, Retinospora filicoides, and a beautiful new double Clematis, in the way of C. Fortuni, but light purple in colour, called John Gould Veitch. For this collection Messrs. Veitch received a third prize, and Mr. Linden received a fourth for his.

For a collection of choice plants of recent introduction, and which formed the third class, Mr. Linden and Mr. Ambroise Verschaffelt were the only exhibitors. Mr. Linden's consisted of Gunnera manicata, Anthurium crinitum, Anthurium trilobum, Adelaster sp. nov., Maranta Legrelleana, Maranta setosa, Maranta chimboracensis, Caladium sp. nov. In the fourth class also there was but one exhibitor, M. Ambroise Verschaffelt. It was a much larger collection, and contained Cibotium regale, Acer formosum, Acer sanguineum, Acer ornatum, Acer jucundum, A. amœnum, A. Frederici-Gulielmi, Ficus Ghiesbreghti, Maranta illustris, pulchra, and Verschaffelti, Agave mirabilis, compacta, grandis, and spectabilis, Aralia Sieboldi foliis reticulatis, Dracæna lentiginosa and Verschaffelti, Aristolochia insignis, Daphne speciosa, Echites rubrovenia, Cordyline Guilforglei, and Tillaudsia grandis. For this collection Mr. Verschaffelt received a first prize, and Mr. Linden a third. The last of the classes in this group was for a single specimen of a new plant remarkable for its culture. Here Messrs. Veitch were first with a splendid specimen of their Maranta Veitchii, and Mr. Linden second with a fine plant of Anthurium regale.

In Orchids there were only two exhibitors, Mr. Lüddemann and Messrs. Thibaut & Keteleer, of whom the former took the first prize and the latter the second, and their specimens were not such as to require any special notice. There was, however, a specimen of Vanda suavis, with several large masses of Cattleya Skinneri, from the Duc d'Agen, which not even equalled anything of the kind ever seen in England.

The only other objects worth noticing were some extraordinary bundles of Asparagus, exhibited by Messrs. L'Hérault-Salbœuf et fils, Rue de Sannois, Argenteuil, which for size have perhaps never been surpassed and rarely equalled. M. Lonis L'Hérault also exhibited some of extraordinary size, though not equal to the former.

VINES AND VINE BORDERS.

Mr. Wills has carried the discussion of this subject from the garden under his own charge to that of Mr. Meredith, and if any inconvenience arises from this change, I shall not consider it is my affair. I can only conclude he thought this would give him an advantage; be it so. I shall try and show him it is a mistake for him to treat a matter involving such large sums in such a light way, and also that he has not given us information enough fairly to support his deductions.

The first time Mr. Wills makes reference to my letter is in that very involved sentence or question, beginning with the words "supposing it to cost £60 or £100, according to size, and with a view to its lasting in good condition sixty or a hundred years." I never hear of any one finding in the dictionary of facts either the word "if" or "suppose;" but let me ask, If a border which costs £60 will last sixty years, and one that costs £100 one hundred years, as he "supposes," why one which costs £15 should not last fifteen years, and one that costs £20 twenty years? and are there in the higher-priced borders some more expensive materials used which cannot be afforded in the cheaper ones? and is this some patent manure "that will last in good condition sixty or a hundred years?"

In his description of the early vinery, 65 feet long and 23 feet wide, Mr. Wills tells us the depth and width of the inside borders; but in speaking of those on the outside I see only the depth and not the width; nor do I in any single instance see the size of any outside border given! When I was at Garston Mr. Meredith told me that the use of these small borders was to save watering, and not to support the Vines, and I wish to know if he has changed his mind. Mr. Wills tells me "he did not make an examination of the Vine borders," "but that any Grape-grower can tell from the Vines that the borders were well filled with fine healthy roots," "and that I may take his word for it that the roots are to be found in quantity both outside and in," adding, "if there is any difference in their healthiness, those in the outside border perhaps will be the best." I am a Grape-grower, and I can tell by looking at a Vine if it has plenty of roots to support the crop it is carrying; but, I confess, I cannot tell by looking at a Vine in which border the greater part of its healthy roots are. I do not say that this cannot be done; but will Mr. Wills tell me how, and excuse the doubt implied in the question?

After giving us a description of the semi-lean-to, 128 feet long by 17 wide, and its wonderful crop last year, Mr. Wills asks me "what I think of the show system of Vine-border-making after that;" a very plain question, and I will try as frankly to answer it. The examples given are a Lady Downe's bearing twenty-two bunches, averaging 1½ lb., or 33 lbs. in all; a Barbarossa with 30 lbs. contained in three bunches, a second Lady Downe's with sixteen fine bushes, a second Barbarossa with three bunches weighing about 20 lbs., and Child of Hale with four bunches, the united weight of which would be about 36 lbs., the largest counting for 12 lbs. I do not think I can judge of the powers of a border by any one year's result. Mr. Wills says this house has been planted about six years; surely Mr. Meredith would not grow these Vines so many years without cropping them, that he might astonish the world in the end by crowding six years' crop into one. I also want to know how many canes each Vine had, the distance they are planted apart, and how much the cane or canes had been shortened the previous year; which means, Were these bunches produced from spurs or new canes? Till I know all this I must conclude that each Vine had only one cane 17 feet long, and which cane was pruned on the close system. May I calculate the previous year's crops at this rate progressively?—I will take the medium 33 lbs.; this is at the rate of 5½ lbs. per year's growth, the year of planting not being counted:—Sixth, 33 lbs.; fifth, 27½ lbs.; fourth, 22½ lbs.; third, 17½ lbs.; second, 12½ lbs.; first, 7½ lbs.; total, 120½ lbs. Say if a Vine so treated can produce half of this 120½ lbs. in the first seven years of its growth, or 60 lbs., it has done well; and if the house would average it, then it is my opinion that I should differ from Mr. Wills in his conclusion that there is an outside border needed, and should be quite willing to point to these facts as being a proof that my opinion was correct.

I am surprised that after such facts as are here described

Mr. Wills should have presumed to tell Mr. Meredith that if he did not add an outside border, "and that soon," he would "spoil his magnificent Vines;" but let us examine what this advice amounts to. He tells us the inside border is 12 feet wide and 5 feet 6 inches deep, and gives it as his opinion that Mr. Meredith should expend £130 to add an additional 12-feet-wide border outside; if this is also 5 feet 6 inches deep, which is surely deep enough, it will be in all respects the same size as the one inside, and if it cost £130, which he says it will, I think we may fairly presume the inside border will cost the same sum, or £260 for the pair. Again, if the second is so imperatively needed, as I gather his language means, for he says, "but he will be obliged to make it, and that soon," though this border has only been made six years, I conclude the second will be as quickly exhausted. Here, then, is an expense of £260 for borders each twelve years. Let me, then, ask him the question he asks me:—"Which is the less expensive mode of making a Vine border, to make it thoroughly in the first instance, supposing it to cost £60 or £100, according to size, and with a view to its lasting in good condition sixty or a hundred years," or to make one costing £130 every six years? Mr. Wills mixes up his argument on Vine borders with his praise of Mr. Meredith's vineries; either subject is worthy of more consideration than he gives it. Of the first—the border-making, I still think the proper way of treating it is as a commercial speculation, where results in value in the shape of a crop of Grapes, or the crops of a series of years, are set against the cost incurred; and if in this matter I have wrongly judged Mr. Wills, and he really does desire to prove that he wishes to place before us a plan of growing Grapes economically, he has only to do so in the practical way I have indicated, and I will retract anything I have said that will carry an imputation that he is wanting in regard for the strictest economy in such outlay.—G. H.

NOTES AND GLEANINGS.

We noticed approvingly lately the approaching exhibition of Tricolored Pelargoniums at the Royal Horticultural Society, and we have since been requested by the Rev. Mr. Dix, Chairman of the Floral Committee, to publish the following:—"In common with many amateurs and others much interested in the variegated form of the Zonal Pelargonium, I am looking forward to a grand treat on Tuesday, May 21st, when I trust the invitation put forth by the Council of the Royal Horticultural Society will be cheerfully responded to. I believe that the idea of an exhibition of these plants has been most favourably entertained by all the raisers of this class of Pelargoniums, and that a desire prevails that a magnificent display should be made on the 21st. It may be well, perhaps, for the benefit both of amateurs and others, briefly to sketch out what is expected from exhibitors on this occasion. It is desirable that groups or collections should be shown, including the earliest form of variegation, showing its progress to that of the present year, that a paper be sent with each collection, stating the advance or improvement gained from an original point—for instance, from Mrs. Pollock to the seedlings of the present year. It would be well if each exhibitor would state whether accurate entries and notes have been made and kept of the parentage of seedlings, giving the names of the male and female parents. One great object in view is to prove, if possible, whether the skill of the gardener (a point at present doubted by some) has any certain control over Nature in producing these variegations. It will not be necessary that a tedious and lengthy paper should be written; a simple proof stating that definite results have been achieved by certain proceedings in hybridising is all that is required or expected. The names of the parent plants written on the label bearing the name of the seedling plant, would be most interesting. I cannot but think that much valuable information would be thus afforded to the horticultural world; also that subject matter for a conversation at the meeting to be held afterwards, would be given, which, doubtless, some of our botanical and horticultural friends would avail themselves of. New and distinct varieties separately entered for the decision of the Floral Committee, will receive certificates according to merit, and medals will be given to such groups or collections accompanied with the written information required, as shall be considered most worthy. Let not the amateur be afraid of exhibiting on this occasion. The raiser of three or four seedlings of merit, after careful and thoughtful selection of parents for hybridising, may have something of greater interest to exhibit, than seedlings collected from all parts of the kingdom, of the origin of which no trace can be shown. It would be well for those who intend to exhibit on the 21st, to give due and early notice of the same to Mr. Eyles, also to endeavour to bring their collections as soon after nine in the morning as possible, as it will take some considerable time to arrange them." We think Mr. Dix's hope that the exhibition will be successful, will be fully realised, for we know of many who will exhibit, and who will detail most interesting information relative to the production of these varieties.

—— The following, from a correspondent, merits attention:

"Few things could have given more satisfaction than the announcement of the show of Tricolor Pelargoniums. The raisers and the public are alike anxious to know what is in existence. This show will afford the best possible opportunity of taking notes and assessing the plants at their relative worth to others. The information asked from the raisers about the history of these plants and the probable cause of their origin, will also have a specific value.

"There is one point that further information should be given upon, and that is the manner of judging the plants. The awards will carry great weight, and have a large money value, and it would be wise to appoint a special jury for the occasion; at least if several extra judges were appointed to act with the Floral Committee it would probably afford more satisfaction to many as well as—A Provincial."

WORK FOR THE WEEK.

KITCHEN GARDEN.

When the ground is not too wet the hoe should be kept in use: in some instances the appearance of weeds will sufficiently indicate the necessity of this; but even where such is not the case, this implement, or small three-tined drags, should be employed to stir the soil frequently between the rows of young crops. *Asparagus*, let those who would have it first-rate see that plenty of manure or half-rotted vegetable matter is dug into the alleys forthwith. *Celery*, prick-out, and a few trenches for the earliest may now be prepared, using plenty of manure; for to have it fine, it must be planted almost entirely in dung. *Carrots*, weed, and also *Onion*-beds as soon as the seedlings can be taken hold of. Those who are short of hands will find this the best economy. Examine the various *seed-beds*, in order that any defect may be made up as much as possible. *Lettuce*, transplant from the seed-beds before the plants become too large, and sow successions; the Paris White Cos and the Malta Cabbage Lettuce should be more especially cultivated for summer use. *Peas*, stick them as soon as they are earthed up when a little above the ground, and sow successions, with Round *Spinach* between the rows, if space for the latter be not found elsewhere. *Rhubarb*, keep down all blossom shoots from both this and *Sea-kale*, and the latter should now have the superfluous shoots thinned away, about four or five to each stool are sufficient.

FRUIT GARDEN.

Proceed with the disbudding of Peach, Nectarine, and Apricot trees, taking care not to wound the bark of the branches at the base of the shoot; a knife should generally be employed. The blossoming being over, temporary copings may be removed, and syringing commenced. The aphis must be sharply looked after and destroyed as it appears by means of tobacco dust. Hoe and weed Strawberry-plantations, and lay grass or other substance between the rows to keep the fruit clean and the ground moist.

FLOWER GARDEN.

In order that half-hardy flowers may be induced to make rapid progress when planted out it is absolutely necessary that those taken from in-door protection undergo a hardening process for at least a week. To be well established in their pots and well hardened is to insure success. Many persons, however, in fact the majority, cannot command frame or pit room sufficient to receive a host of potted Verbenas, Calceolarias, Heliotropes, Petunias, Fuchsias, and Pelargoniums, such, therefore, cannot pot off stock singly. The next best plan is to prepare some raised beds in the kitchen garden with old vegetable mould light and sandy, and to transplant, or as gardeners term it, to prick-out the struck cuttings from the store pots into these beds about 3 inches apart, in fact, so that they can be taken up with a trowel with a ball of earth; they should have hoops and mats or some covering at night, and in bad weather all day. In the third or last week in May they may

be transferred to their destination, removing with good balls of earth. Tender Roses that have suffered from the effects of the past winter will now require to be pruned. Standards would likewise be much improved by giving them a good soaking with dung water; it is best applied in cloudy weather. All vacant beds in the flower garden should be again dug up or raked over, to be ready for the reception of the plants, which should be put in whenever the weather is suitable. Such herbaceous plants as Pæonies, &c., that soon will come into bloom should be tied up. Divide and transplant Hepaticas and strong plants of double Scarlet Lychnis, or take off some cuttings close to the root, and place them in a mild frame-heat in small pots, these will soon strike root, and will be fit for planting out in borders. Attend to the watering of lately-planted shrubs if they require it. As Crocuses and other bulbs will now be on the wane, patches of biennials which have stood the winter may be planted close beside them; when the annuals are decayed the bulbs, if necessary, may be removed at the same time.

GREENHOUSE AND CONSERVATORY.

We would again urge the propriety of weeding out all extraneous or fading plants from the conservatory and other plant-structures, better destroy inferior stock than suffocate the good. Where a system of high cultivation is carried out, crowding will assuredly defeat the end in view. Centradenias now exhausted with flowering should be shaken out of their pots and repotted. Fibrous loam and fibrous peat soil, with charcoal and coarse sand, make an excellent compost for them. Make cuttings of them as soon as suitable young wood can be obtained. Calceolarias will now be coming into bloom, they should have their flower-stalks tied out and plenty of room afforded them. They will now begin to form objects of much attraction in the greenhouse, but, above all, see that they are perfectly free from aphides before their flowers expand. Pelargoniums now begin to claim much of our attention. See that every leaf is perfectly clean, and that the branches and trusses are properly supported with sticks. Water freely, and occasionally with manure water. Have an eye to the propagation of stock for succession or winter-flowering in due time. Secure cuttings of such plants as Brugmansias, Clerodendrons, Eranthemums, and those useful winter-flowering plants Euphorbia jacquiniæflora and Geanera bulbosa. Those who have one house in which to grow the stock of Orchids must make a compromise in point of temperature between that of the hot and moist valleys or shady woods of the east, and those from the western hemisphere, which inhabit high and airy situations. To accomplish this we would advise a very free circulation of air during the earlier part of the day, and even a little all night, if possible, accompanied with a great amount of atmospheric moisture, and to accommodate with the least sacrifice, such as Aërides, Saccolabiums, Dendrobiums, &c., we would shut up a considerable amount of heat very early in the afternoon. All means under the control of the cultivator should, in fact, be brought into active and vigorous operation at this season. The plants which are beginning to expand their blossoms should be removed into a warmer but much drier atmosphere; indeed, many of the species with slender flowing-stems should be similarly located to prevent their damping off; those in baskets, or on blocks of wood, should never, at this season, be allowed to become perfectly dry. Every care should be taken to promote the extension of the roots and to preserve them, for on this depends the strength of the flower-stalks, and, of course, the ultimate beauty and perfection of the plant.

PITS AND FRAMES.

Harden-off tender annuals and other plants for the flower garden, and continue potting-off annuals and struck cuttings as they require it, putting in cuttings of scarce sorts for store. If cuttings of choice rock plants, such as Phlox setacea, nivalis, subulata, verna, procumbens, amœna, &c., with Saponaria ocymoides, Onosma taurieum, Alyssum saxatile, Iberis sempervirens, &c., are put into prepared cutting-pots in sand, placed in a mild frame heat and treated as Verbena cuttings, they will soon strike root and be fit for planting out, or potting-off, as may be required.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Sowed successions of Peas, Broad and Kidney Beans, and Scarlet and White Runners out of doors, protecting the Peas and Beans, especially from their natural enemies; but after this season the feathered tribe trouble us less. We have a fine lot of Kidney Beans in boxes to plant out under a little protection, as in a bed intended for Celery, to succeed those knotting their bloom-buds, which will again succeed those bearing profusely. A syringing with clear soot water overhead after a hot day, we believe helps to invigorate the plants, and keeps insects of all kinds away from them, and the keeping insects away is a much more profitable affair than driving them away, or destroying them. In all cases prevention is better than cure, and cleanliness, plenty of air, a temperature at night much lower than the daytime, so as to give the plants rest, a quick eye and nimble fingers are better every way than dealing much in filthy mixtures, which less or more will have to be used, if insects are allowed to become too numerous.

We mentioned some time ago that we had been little troubled with *green fly* on forced Strawberries for years, but since making that statement we have had a little fly on every batch since wherever they were placed, whether in pit, house, or orchard-house, and even on Saturday, discovered some on pots still standing out of doors. As they generally appeared on the young leaves in the crown, and if not removed by the fingers, would attack the flower-stalks; in some instances, besides thus removing them, we have had to smoke, but as they appeared on nothing else in the same place it looks as if eggs had been deposited on these plants late in the autumn, and that they had been hatched into vitality when they had received the necessary heat under glass. Drawing the fingers along such young leaves and flower-stalks, and then syringing with clear soot and lime water, or both united, is a quicker and cheaper process than smoking with tobacco, &c. We dislike smoking with tobacco after the fruit has begun to change colour, as we think the flavour of the tobacco hangs a long time about it.

Before this is printed, we hope, if the weather continues so fine, to give a good manure watering to Cauliflowers, Cabbages, forward Peas, &c. After so much rain, there is little likelihood of the drainings from the dunghill, or the farmyard being too strong for such purposes. When strong water cannot be obtained from the stable or cow-house undiluted with water, it should have four or five times the quantity of water added before using it.

Disappointments.—We instanced lately colouring seeds with red lead for keeping birds from them, and so far as we can see it is effectual in every case; small seeds and even large seeds, as Peas included, in no case have we seen them touched; but, then, that is no security against the seedlings being preyed upon. We sowed some rows of Lettuces very thinly, intending to let them perfect themselves in the rows without transplanting, and they showed well, but not one is now visible, and with all our examining we could not find the trace of a slug or snail, as means had been taken to keep them away. Birds, no doubt, were to blame, and we would not have been so sure but for the following fact:—The first sowing of out-door Carrots was just beginning to show, but instead of advancing they seemed to get out of sight more and more. Lest slugs should assail them at night, lime and soot were thrown thinly over the piece, but still with no manifest advantage, and we could find no trail of an enemy, and the ground being dry, no mark of birds; but on looking at this ground between 3 and 4 A.M. we had the satisfaction of seeing three brace of partridges marching up and down the rows, and nipping up every green thing. We have no doubt that in some such cases the seedsmen bear the blame, when the seed was all right enough.

FRUIT GARDEN.

We have already alluded to Strawberries and green fly. Otherwise we have never had them show stronger, and hardly a blind one among those in pots, and after such a wet dull autumn as last year. Partly on that account, our plants as a whole were not so strong in the autumn as usual. Two thoughts have just struck us, and we would wish them to be ventilated among our brethren. First, whether it is not possible to have our Strawberry plants for forcing *too strong* before the autumn—that is, that there may be too much foliage to permit of perfect ripening of the fruit-buds; and secondly, whether the fullest exposure to the sun after potting may not in bright autumns be carried to an excess? The plants in the open ground are also showing very well.

The chief work has been thinning, disbudding, and watering; and the orchard-houses have required the latter liberally. During the brightest days we threw with a syringe water just coloured with whitening over the glass, merely spattering it, just to break a little the force of the sun's rays, and prevent the

plants drying so quickly. This would be all washed off by the first shower, and if dull days should come without rain, the most of it would come off by drawing a large hair broom over the glass. Such spattering from a syringe would be done to a large extent of glass in a few minutes, and it is a useful practice especially when, as in the present case, such bright weather follows after dull drizzling weather. This is the quickest and cheapest mode we know of for giving a slight temporary shade.

ORNAMENTAL DEPARTMENT.

The fine weather after the rains has made the grass grow far beyond our reach, and in such cases, for removing Daisies, &c., our daisy knife has been very useful, making a large space green in a short time. Our chief work, besides attending to cuttings, potting, and watering, has been fresh arranging verandahs, conservatory, &c.; taking Azaleas, Cytisus, &c., to the coolest places where a little shade can be given; placing Scarlet and other Pelargoniums where they would have more light, air, and coolness; moving Fuchsias where they could have plenty of air and room to grow. All these matters require much forethought where a large extent is to be made ornamental and there are no houses or pits especially for such preparatory purposes; but every house has to serve many purposes besides supplying fruit as the chief object. Under such circumstances plants grown in shade will be apt to become drawn a little, do what you will, a matter sometimes lost sight of when much is wanted with very inadequate means, and when comparisons are made between results so obtained and results in different circumstances, where a house can pretty well be devoted to one definite object. This is a subject which some most intelligent, deserving, successful gardeners have wished us to advert to prominently; but we would rather that some other coadjutor or correspondent would give it attention, and allow the matter to be fairly ventilated for the benefit of all parties.

These general fresh arrangements are not desirable, but at times they can scarcely be avoided. It is well when a plant past its best can be removed and be replaced by another, without any general clearing out; but the latter plan has this advantage at times, that an old plant-house may be made by fresh arrangements to look altogether a different house. As in our case, hitherto we have had a large space under glass to make ornamental, which we could only do when all danger from frost was over. Such a fresh arrangement two or three times a-year was almost indispensable, besides the temporary changes referred to. Thus with other minor matters, the Azaleas not removed have been placed in the shadiest part of the conservatory, and the Camellias, about over, have been taken to the late vinery, and as the chief attraction besides were Salvias, Cinerarias, and Primulas, these, though some are very good still, yet being past, instead of coming to their best, were all removed, the house, stage, &c., well washed, a fresh arrangement made with the Azaleas, as above alluded to, and florists' fancy Pelargoniums, Scarlet Pelargoniums, Fuchsias, Lantanas, &c., so that the house has an entirely different appearance from what it had a few days ago. Even with no change of material, a small house may be made very attractive by so changing the arrangement of the plants, as to present a different appearance. When the amateur enters his small house, and finds every plant in its accustomed place, the feeling of monotony will creep over him, which would be dispelled even by the interest awakened from having to seek for his favourite plant under a fresh arrangement combined with other plants. —R. F.

COVENT GARDEN MARKET.—May 8.

We have no alteration much to note here, prices remain nearly the same. A large quantity of new Potatoes from Lisbon has eased the market, and we daily expect our West of England growers to commence sending. Hothouse fruit far in excess of the demand.

FRUIT.

	s.	d.		s.	d.
Apples ..... ½ sieve	2	0	to	3	0
Apricots ..... doz	0	0		0	0
Cherries ..... box	3	0		4	0
Chestnuts ..... bush.	0	0		0	0
Currants ..... ½ sieve	0	0		0	0
Black ..... do.	0	0		0	0
Figs ..... doz.	0	0		0	0
Filberts ..... lb.	0	0		0	0
Cobs ..... lb.	0	9		1	6
Gooseberries .. quart	1	6		0	0
Grapes, Hothouse .. lb.	5	0		10	0
Lemons 100	5	0		10	0
Melons ..... each	0	0	to	0	0
Nectarines ..... doz.	0	0		0	0
Oranges 100	5	0		10	0
Peaches ..... doz.	0	0		0	0
Pears (dessert) .. doz.	0	0		0	0
kitchen ..... doz.	2	0		4	0
Pine Apples ..... lb.	5	0		8	0
Plums ..... ½ sieve	0	0		0	0
Quinces ..... doz.	0	0		0	0
Raspberries ..... lb.	0	0		0	0
Strawberries ..... oz.	0	6		1	0
Walnuts ..... bush.	10	0		20	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes ..... each	0	6	to	0	3
Asparagus .... bundle	4	0		7	0
Beans, Kidney, per 100	1	0		2	0
Scarlet Run. ½ sieve	0	0		0	0
Beet, Red ..... doz.	2	0		3	0
Broccoli ..... bundle	2	0		3	0
Brus. Sprouts ½ sieve	0	0		0	0
Cabbage ..... doz.	1	0		1	6
Capsicums 100	0	0		0	0
Carrots ..... bunch	0	6		0	8
Cauliflower ..... doz.	3	0		6	0
Celery ..... bundle	1	0		2	0
Cucumbers ..... each	0	6		1	4
pickling .... doz.	0	0		0	0
Endive ..... doz.	2	0		0	0
Fennel ..... bunch	0	3		0	0
Garlic ..... lb.	0	8		1	0
Herbs ..... bunch	0	3		0	0
Horseradish .. bundle	2	6		4	0
Leeks ..... bunch	0	3	to	0	4
Lettuce ..... per doz.	1	0		2	0
Mushrooms .... pottle	1	6		2	0
Mustd. & Cress, punnet	0	2		0	0
Onions .... per bushel	4	0		6	0
Parsley ..... per sieve	3	0		4	0
Parsnips ..... doz.	0	9		1	3
Peas ..... per quart	3	0		5	0
Potatoes ..... bushel	4	0		6	0
Kidney ..... do.	5	0		6	0
Radishes doz. bunches	0	9		1	6
Rhubarb ..... bundle	0	4		0	8
Savoys ..... doz.	0	0		0	0
Sea-kale ..... basket	0	0		0	0
Shallots ..... lb.	0	8		0	0
Spinach ..... bushel	2	0		3	0
Tomatoes .... per doz.	3	0		4	0
Turnips ..... bunch	0	6		0	0
Vegetable Marrows dz.	0	0		0	0

TO CORRESPONDENTS.

Books (*H. G.*).—We intend publishing such a work as you mention next spring. The botanical part of the Dictionary you mention has not been published in a separate form.

Royal Horticultural Society (*N.*).—If you write to J. Richards, Esq., Assistant Secretary, Royal Horticultural Society, South Kensington, he will readily send you printed particulars You can then decide for yourself whether you will be a two-guinea or four-guinea Fellow. There is not a sufficient number of pomologists to support a journal devoted to their favourite pursuit.

Stalks of Bunches of Grapes Shanking (*Grapes*).—We think that sixty bunches from such a small house, 10 feet long, was rather over-cropping. The shrivelling-up of some of the bunches is owing to the excessive wet of the season, the unprotected state of the stems in winter, and rather too moist an atmosphere inside the house. Give more air.

Insects (*Subscriber*).—The "reptiles" at the roots of your Peas are a species of snake millipede, Julus pulchellus. Strew some rape-cake dust along the bottom of the drills, then sow the Peas, and cover them with the same kind of dust before covering with earth.

Tea-scented and Noisette Roses (*Rosamunda*).—To have these bloom in August they should have the necessary pruning at once, and should be placed out of doors in an open and sunny situation, the pots being plunged in coal ashes or other material. Allow them plenty of room, and top-dress the surface of the soil in the pots with rich compost. They should be well watered and syringed on the evenings of hot days. You may plant them out of the pots in good, rich, deeply-dug or trenched soil, where they will grow more vigorously; we would do so now, pruning them in a few days hence. It will be necessary to have a canvas or other awning in readiness in order to retard the blooms, if too early, and also to protect them from rains and excessive drought and winds. If you grow them in pots, they will be more readily removed and placed in a cold pit if it be necessary to forward them.

Walker's Stove.—"E. B. B." wishes to be informed if any of our readers have used this stove in a plant-house, and if so, with what results.

Glazing a Small Span-roofed House (*A. B. C.*).—1, For such a small span-house, 15 feet long, one end against the gable of a dwelling-house, with side glass above the wall 3 feet in height, altogether about 5 or more feet in height, and supposing that the house at the ridge is from 9 to 10 feet in height, you need not be in any doubt as to the quantity of glass wanted, by taking the square feet of the roof, end, and sides, deducting the spars for the sash-bars. 2, You will obtain very good glass for such a purpose at about 16s. per 100 feet, cut to the size you want; but if you wish to be secure, we would advise giving about one-third more for 21-oz. sheet glass. 3, You would build such a house most economically by having two or three ventilators in the side walls, and having the whole of the side glass, and the roof glass fixed. You would want one ventilator on the roof, close to the gable of the house now standing, and another over the doorway, and then in very warm weather you could open the door. For such a house we would use squares from 18 inches wide and 12 or more in depth, and rafter sash bars 1¼ inch wide and from 3¼ inches deep, placed so as to receive the 18-inch-wide glass between the rebates. 4, Such span-roofed houses give more light than lean-to's, but of course they are much colder in winter, and require more fire to keep them warm. Where a wall for a back already exists and costs nothing, we would be strongly disposed to have a lean-to with a fixed roof. Very fine things have been grown under lean-to's, and they require much less fuel to keep them warm. Where a wall has to be built, then we would prefer the low walls at the sides of a span-roof, as the glass and wood will be cheaper than brick. Of course the aspect is something. If a lean-to you should have the sloping glass facing south, south-east, or south-west; with the ends of the house pointing north and south or that way, you would be sure of plenty of sun all day.

Bees in Conservatory (*E. M. B.*).—The best and only method that we know of preventing bees from entering a conservatory is to have the openings covered with hexagon netting.

Taking up Tulips, Anemones, and Ranunculuses after Flowering (*Idem*).—The bulbs and roots of these plants may be taken up after flowering and when the foliage turns yellow, as they are then perfected. They may be dried a little on a shelf in a cool airy shed, and when dry stored away in sand. It does not injure them much, if at all, if they are mature when taken up, and they are planted early in autumn.

Pricking-out Auricula Seedlings (*E. F. W.*).—You may transplant, or rather prick off, the seedlings sown this spring when they are large enough to handle. A north border will be a suitable place for them. Do not plant too much under the shade of the wall or hedge Auriculas like a moderately rich and rather strong loam; but they will thrive in a light soil.

Blossoms of Orchard-house Trees Falling (*A Subscriber*).—We hope that you will succeed better next season. Do you lift your trees in pots—that is, to break or remove the roots that have gone through the pots, say in the beginning of October? The dropping of the blossoms we attribute to one of two causes—want of ripeness of wood in autumn, or allowing the pots to become too dry. We have had no dropping of blossoms, but many of the blooms of Cherries were defective. We attribute this to the trees standing thickly in the house last autumn. We would have liked them out of doors after September for a month or two.

Mealy Bug.—Mr. Cooke, gardener, Gatcombe Park, says that he has found two fumigations with Collyer & Roberts's "Tobacco Tissue" effectually removed this pest.

Camellia-bed (*Flora*).—You may plant Ferns among the Camellias; but whether the Ferns succeed will depend upon soil, aspect, and treatment. The leaf enclosed is of Populus alba, var. canescens.

Bleached Leaves (*G. N.*).—They will not stick to the paper if washed thoroughly in water after removing them from the bleaching liquid. Oiled paper may be also used.

Soil (*Beta*).—The sample enclosed, with the admixture of sharp sand, will do for Begonias. Cocoa-nut fibre refuse is useful where you cannot obtain peat.

Planting Forced Strawberry Plants (*Subscriber*).—We would plant out every potted Strawberry plant that showed fruit. You will endorse our opinion next year.

Top-dressing Vine Borders (*T. W.*).—The best time to top-dress Vine borders covered with tarpaulin during the winter months is early in summer; then, upon the removal of the covering, a top-dressing from 1½ to 3 inches thick may be applied. Inside Vine borders should be top-dressed in winter; but we prefer doing so immediately after the house is cleaned and put in order for another year; any time, however, from the fall of the leaves to the recommencement of growth, is a good time to top-dress Vine borders. We prefer extending Vine borders early in autumn, or when the leaves turn yellow; but it may be done from that time until growth recommences.

Gesneras not Thriving (*A Novice*).—It is hard to tell what could cause the evil of which you complain, as you do not furnish us with any particulars. We are inclined to think, from the description you give of their present appearance, that they are infested with insects, but what these are we are unable to form an opinion. Send us a leaf or two.

Greenhouse Vinery—Burning Sulphur in (*Sabrina*).—1, We can have no objection to your substituting hot water for the flue for such a house, 20 feet by 12, only if the flue is sound, fresh, and works well, we would think twice before we made the alteration. You will most likely find that you will effect no saving in fuel. 2, We knew an experienced gardener that burned sulphur to kill fly on Cinerarias once, but it was a lesson for the future. We are surprised that what your predecessor did in this way in 1864 he repeated in 1865. No doubt the little fruit was spoiled, leaves shrivelled, &c. Our only surprise is, that the Vines did not suffer more from such inflictions. Your accidental burning of wood in the house was a less evil, though that would be very injurious, but lessened in its effects by the leaves becoming ripe before the accidental burning. No growing plant will stand the fumes of burning sulphur. When we have cleared out a house we have often burned sulphur, covered with a thick layer of damp moss, to destroy not only moulds like your predecessor, but every living thing. No plants will stand this sulphur-smoking except those that are deciduous, and even these, as Vines, Peaches, &c., will be injured, unless the wood is well ripened, and at the rest period. 3, You must be content with less. Let the Vine roots have the border or the most of it. The Strawberries not only take away much of the richness of the soil, but the soil is kept cool beneath them with their thick shade. A row or so in front would not be so much, but the thick plantation of Strawberries will be sure to injure the Vines, and will naturally cause them to root deeper than would be desirable. 4, Your Vines must have a strong constitution to pass through so many disasters, and still be moderately vigorous, though not fruitful, and before you take the following advice, we would ask a good neighbouring gardener to see them, as we base it chiefly on the supposed fact that the stems of the Vines will have somewhat suffered. We would select on each Vine, near the base, the best and strongest shoot that now is growing, as you have used no fire, train that carefully without stopping, stop all the shoots that show fruit at one joint beyond the fruit, and stop all the other shoots left, thinning them out moderately, but leaving enough to keep up the free growth. As the one unstopped shoot grows, remove all the fruitless shoots as it passes or comes up to them. The object of doing this is to throw all the strength of the Vine gradually, but at length thoroughly, into this fresh young shoot. For this purpose, until autumn allow the laterals on this shoot to grow a joint or two before stopping them, and allow none anywhere else. As soon as the fruit is cut, take out the old shoots, or stems, and give fire heat in the autumn thoroughly to ripen this new shoot, and commence with that next season. Meanwhile clear out the Strawberry-border, remove what surface soil you can until you reach the Vine roots, and top-dress with 3 or 4 inches of rich fresh soil. Mulch with horse-droppings.

Rose Tree Bark Eaten—Destroying Aphides in the Open Air (*A. B. A.*).—We should think the bark is eaten from the shoots of your Rose trees by beetles of some kind, but what these are we are unable to tell. You may destroy the aphis in the open air by syringing the trees infested with tobacco water from the tobacconists, diluted with six times its volume of water.

Diseased Pear Leaves (*C. M.*).—The blisters, as you term them, are elevations caused by the vegetation of that pest, the parasitic fungus Roestelia. If only a few leaves are affected pick them off without delay and burn them. Do this immediately with every leaf you see similarly attacked, for the spores are diffused and every one of your Pear trees will be similarly scourged. If too many leaves are affected to permit of their being removed, dust flowers of sulphur perseveringly over the leaves, and this will have to be repeated every season until the fungus is extirpated.

Nitrate of Soda and Common Salt (*A Reader*).—If mixed they will not have any chemical action on each other. One pound of the mixture to each 30 square yards of your grass land will be sufficient. We should apply it immediately. (*Artificial*).—You will see by the preceding answer how much to apply to 30 square yards; the same, namely, as of the mixture with common salt. Do not let it touch the leaves of your cultivated plants.

Vines Fruiting only at the Ends of the Canes (*W. B.*).—We think there are two very likely causes—namely, that the roots of the Vines have gone down far from the surface, and that would help the second cause—an imperfect ripening of the wood. In the latter case give little water after August, and dry heat from fires in autumn. If the roots are deep and the foliage large, we would select one or two shoots to each Vine, grow them without stopping, and let these shoots bear next season. This latter advice was taken partially last season in several circumstances, and there was scarcely a bunch on the spur-pruned, but plenty on the rod-pruned Vines.

Planting a Flower-bed (*B. B, Evershot*).—Both your plans would do very well, but we prefer the second, as being more simple and lasting better. The ground-carpeting with white Petunias will not hurt the Gladiolus, if the Petunias are planted between the rows of Gladiolus and are not allowed to grow too rampant. We presume that the Gladioluses are chiefly scarlet; if they were chiefly light-coloured a carpeting of pink Saponaria calabrica would be very effective.

Cutting Down Heaths (*H. D.*).—You may cut down the Heaths to within a foot of the ground, and in all probability they will start from the bottom, but it is not a good practice, as in all cases that have come under our observation they are impatient of much cutting back. We should remove them and plant fresh ones. The following are compact growers—Erica vulgaris decumbens, E. Hammondi, E. vagans carnea, and E. tetralix intermedia.

Azaleas not Flowering (*C. W.*).—Repot at once the Azaleas that have not flowered and are growing freely if they require it, giving them but a moderate shift, and employing a compost of two-thirds sandy peat and one-third turfy loam, with good drainage. The plants should be kept rather close, and syringed overhead morning and evening, the soil being kept no more than moist for a few days, until the roots are working in the fresh soil, then water freely. When the growth is complete give abundance of air and light, and we think they will set their buds well, after which keep cool and airy.

Planting a Sloping Bed (*An Amateur, Oakham, Rutland*).—You do not say what the form of your bed is, but we presume it is a rectangle or parallelogram. In that case you may plant it in ribbon-border fashion, which, with the materials at command, we would dispose of as follows:—1st, a row next the walk of Bijou Pelargonium; 2nd, Tom Thumb; 3rd, yellow or orange Calceolaria; 4th, Christine Pelargonium; 5th, Stella; and 6th, yellow Calceolaria. Had you Cerastium, Lobelia, and Golden Chain Pelargonium our advice would have differed materially; but being restricted to the plants named, you will find the bed or border look very well with Scarlet Pelargoniums, but infinitely better if you add Calceolarias.

Exterminating Ants (*A Sufferer*).—We can only repeat what we have repeatedly stated, that guano sprinkled over their haunts will drive them away, and ammoniacal liquor from the gas works poured into their nests will speedily cause them to migrate.

Orchard-house Tree Leaves Scorched (*F. T.*).—The leaves sent are scorched through placing sulphur upon hot coal. The fumes of burning sulphur will destroy both animal and vegetable life, and its use along with tobacco for fumigation is to be avoided, as the remedy is more disastrous than the injury caused by the insects it is employed to destroy.

Name of Fruit (*F. W.*).—Easter Pippin or French Crab.

Names of Plants (*Burntwood*).—Alpinia nutans. (*T. B. Brossley*).—1, Selaginella cuspidata; 2, S. apoda; 3, S. cuspidata, two specimens; 5, Cheilanthes elegans; 6, Adiantum hispidulum. (*C. J. B.*).—Asplenium fontanum. (*T. Catchpool*).—Bromus secalinus, or Smooth Rye Bromie Grass; it is a native of England. (*Mrs. Crosland*).—Oxalis, species not determinable. (*P. C.*).—Amelanchier canadensis. (*P. M., Chelsea*).—1, Pultenæa, species; 2, Apparently a new plant. Please send again when more advanced. (*Ella*).—If the leaves are palmate, it is Viola palmata variegata.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending May 7th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 1	29.954	29.870	62	33	52	49	N.W.	.00	Cloudy and damp; cloudy; very fine.
Thurs. 2	30.051	30.018	65	40	52	49	N.E.	.00	Very fine; overcast; fine at night.
Fri. .. 3	30.116	30.072	70	37	53	50	S.	.00	Overcast; cloudless and very fine throughout.
Sat. .. 4	30.125	30.002	68	39	54	50	S.E.	.00	Very fine throughout.
Sun... 5	29.994	29.889	75	47	55	51	S.E.	.00	Fine; exceedingly fine throughout.
Mon... 6	29.905	29.878	81	49	56	52	S.E.	.00	Exceedingly fine; very hot all day.
Tues.. 7	29.958	29.880	82	51	56	52	S.E.	.00	Very fine; cloudless and hot; clouds and warm at night.
Mean	30.14	29.944	71.85	42.28	54.00	50.43	..	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE ORIGIN OF GAME FOWLS.

Great Britain is the only country in Europe which possesses the Game fowl. India and its islands are, probably, the original countries of the Game fowls, and still possess them. Game fowls are also to be found in Spanish America, probably imported thither from Manilla in the Philippine Islands. Persia and Asia Minor, or Syria, once had them, and the ancient Greeks and Romans were famous for their Game fowls; it is likewise said that the Romans introduced them into this country. With the ancient Greeks, the island of Rhodes was famous for its Red Game fowls, which were called the Rhodian Reds, and the island of Delos for its Silver-Greys, called the Delos Silvers. Some assert that Game fowls were indigenous to the British islands, and some call them a Roman importation, but it is strange, that if a Roman importation, Great Britain alone, of all the Roman European colonies, should have retained them. This would rather prove that they were originally natives of these islands, though they certainly rather bear the appearance of a tropical or Indian origin. However, they have probably been in this country since its occupation by the Romans.

It has been asserted that the Gallus Bankiva has been the progenitor of the Game fowls. I incline to the belief that the three original colours of Game fowls were those of wild original birds which had been reclaimed from a state of nature at some very early period, perhaps in India. The Gallus Bankiva is not fierce enough, nor strong enough, nor large enough to have been the original of our Game breeds, though Bankivas resemble the Black-breasted Red Game. They were, no doubt, the original from which sprung our Bantams, Game Bantams being very like them, especially the Black-breasted Red, though the Bantams are a little smaller than the Bankiva.

The Gallus Sonnerati, or Indian Jungle fowl, has been mentioned as the original of the Game, but in this breed the hen has neither the comb nor wattles, and the cock has the peculiar horny structure of the feathers, which show them not to have been the parent stock of our Game breeds, though they are fierce and spirited birds, and are used for cock-fighting by the natives of the East Indies.

The wild Gallus furcatus, or Forked-tailed cock, thoroughly resembles our blue-legged Red Dun Game, having the blue legs and blue dun breast and tail, and is red in the plumage, but the comb in this species is not serrated or lobed, and it has only a single wattle, and, therefore, differs rather too much.

Game fowls may probably have sprung from the mixture of all the three breeds named, with their own three original wild colours, as many good naturalists believe them to have done. I think, however, that the characteristics differ rather too much, and adhere to the belief that the original colours, which are still to be met with in India, as well as in Britain, were derived from birds reclaimed from the wild state in India or elsewhere at a very early period. Most Indian Game fowls are yellow-legged, but not all. The specimens lately exhibited by the late Mr. B. P. Brent, appeared to be the true Indian Game.

I have already stated that some breeders consider the Grey Game fowls to be a primitive or original colour, but brown of various shades is certainly the original colour in Game hens, and assimilates much the best with the colour of the earth, the foliage and bark of trees, and every natural object, which grey does not. Grey is the wild colour for sea birds, as brown is for land birds, and most good judges condemn grey as an original colour, and agree that the brown hens of different shades, and their red cocks with the greenish dark tails are the only true originals. The Greys, too, always incline much to breed back to the brown hens and red cocks, which shows that these are certainly the true original colours, and grey is often difficult to produce, as in the Game Bantam breeds. Grey is, therefore, most certainly not an original colour as some still erroneously suppose and assert.—Newmarket.

EPWORTH POULTRY AND PIGEON SHOW.

Although the meeting that took place on the 3rd instant was only the second Show that has been held under the management of the Epworth Committee, it proved itself fully equal to many other shows that have boasted a longer standing by many years. The entries on this occasion were fully double those of the year preceding, and anxious to meet the wishes of all supporters, the Committee had wisely connected with the poultry a show of dogs, that no doubt added much to the general attractions. It must be borne in mind that Epworth is a purely agricultural district, and therefore it formed a matter of agreeable surprise to find that the attendance proved nearly threefold that of last season. Everything went on most pleasantly, and the visitors were loud in their congratulations of the Committee. Public confidence appears to be now fairly enlisted in support of the exertions of the management, and several additional annual subscriptions were readily promised on the spot. The day proved a most enjoyable one, the weather being bright and sunny, nor did a single spot of rain fall in the locality of the show-yard during the whole time the Show was open, although at one time the subject of anxious apprehension was that a storm was impending.

The exhibition coops used were those that for many years past have done like duty at the Thorne Show, and, considering the breeding season being now at its height, it was a very remarkable feature that so few pens were vacant.

The quality of the poultry shown was in nearly every class first-rate, and the display of *Pigeons* included large entries from many of our most spirited exhibitors. This evidently formed a very popular portion of the Exhibition, and several very uncommon varieties of Toy Pigeons added most materially to the general interest. Bees, busily working in glass hives, formed another attraction, and the display of fresh butter and eggs was remarkably good. On the poultry pens were arranged a very creditable collection of Parrots and other foreign birds in excellent plumage, whilst Canaries and other singing birds natural to our climate were shown in abundance. A few very capital *Rabbits* were also exhibited. It is a most satisfactory duty to record that not a single accident or mishap occurred in the carrying out of so varied an exhibition, and we especially noticed that within less than an hour from the time of closing every pen was carefully repacked and ready for transit homewards by the next ensuing train. We were informed by the Honorary Secretary, Mr. Hudson, that by the time of next year's show additional railway accommodation will be secured to Epworth, which will, no doubt, entice many amateurs to enter the lists who were deterred from so doing on the present occasion, on account of the distance of the Show from the nearest railway station.

The care taken of the poultry and other live stock on the ground was all that could be desired, and we entertain but little doubt that with continued perseverance on the part of its promoters, the Shows at Epworth in coming years will prove to become most important agricultural meetings.

Spanish.—First, T. Rogers, Walsall. Second, Rev. W. J. Mellor, Colwick Rectory, Nottingham. Commended, T. E. Hitchen, Sheffield.

Dorkings (Any colour).—First, Mrs. Jefferson, Epworth (Grey). Second, G. Oldfield, Epworth.

Game (Any variety).—First and Second, Messrs. Sales & Bentley, Crowle. Highly Commended, J. R. W. Harrison, Spalding (Black Red). Commended, W. H. Wheeler, Carlton, near Nottingham (Duckwing.)

Cochin-China (Any colour).—First, J. H. Dawes (Cinnamon). Second, Rev. W. J. Mellor (White). Commended, W. H. Wheeler (Partridge.)

Brahma Pootras (Light or Dark).—First, Withheld. Second, Rev. W. J. Mellor.

Hamburghs (Gold or Silver-spangled).—First, Messrs. S. & R. Ashton, Mottram, Cheshire (Golden). Second, C. Gravil, jun. Commended, J. F. Loversidge, Newark (Golden).

Hamburghs (Gold or Silver-pencilled).—First, W. Bearpark, Ainderby-Steeple, Northallerton (Silver). Second, Withheld.

Game Bantams (Any colour).—First and Second, R. Bentley, Finningley Park (Black Red, Duckwing). Extra Second, H. Cawood (Black Red). Highly Commended, J. H. Dawes (Black Red). Commended, T. Rogers, Walsall; C. Gravil, jun., Thorne.

Bantams (Any other variety).—First, T. Burgess, Yorkshire (Black). Second, Messrs. S. & R. Ashton (Silver-laced). Highly Commended, R. Bentley (White Japanese); T. C. Harrison, Hull (Gold-laced); Messrs. S. & R. Ashton (White).

Any other Distinct Breed or Farmyard Cross.—First, Mrs. J. Cross, Brigg (Crève Cœur). Second, Withheld.

Game Cock (Any colour).—First and Second, Messrs. Sales & Bentley. Highly Commended, E. Brough, Leek (Brown Red); W. Bearpark, Northallerton.

Cock (Any other breed).—First, J. H. Dawes (Buff Cochins). Second, T. Rogers, Walsall.

Hen (Any other breed).—First, Messrs. S. & R. Ashton (Golden-spangled) Second, C. Addey, Epworth.

Guinea Fowls.—First, T. C. Harrison, Hull. Second, J. H. Dawes.

Turkeys.—First, Rev. W. J. Mellor. Second, R. Bentley. Highly Commended, Mrs. S. A. Wroot, Levels.

Geese.—First, — White, Thorne. Second, Rev. W. J. Mellor.

Ducks (Aylesbury or Rouen).—First, — White (Rouen). Second, J. W. Harrison, Spalding (Rouen.)

Ducks (Any other Breed or Cross).—First and Second, T. C. Harrison (Pintails, Grey Call Ducks). Highly Commended, J. W. Harrison (Wild Ducks.)

Selling Class (Any variety).—First, T. Rogers, Walsall (Spanish). Second, G. Yates, Thorne (Black Red Game). Third, Messrs. S. & R. Ashton (Silver-pencilled Hamburgh).

Extra Prize for best pen of Poultry (a Painting of Game Fowls).—Messrs. Saltmarsh & Bentley, Crowle (Brown Red Game.)

PIGEONS.

Carriers.—First, H. Yardley, Market Hall, Birmingham. Second, J. W. Harrison. Commended, H. Brown, Sheffield; J. R. Jessop, Hull.

Pouters.—First, H. Yardley. Second, J. Taylor, Newark. Highly Commended, H. Brown. Commended, T. Burgess, Brighouse.

Tumblers (Any variety).—First, T. Statter, Hull. Second, H. Yardley. Highly Commended, H. Cawood (Beards); T. Burgess (Almonds).

Fantails.—First, T. Elrington, Woodmansey, Beverley. Second, H. Yardley. Highly Commended, H. Yardley.

JACOBINS.—First, F. Key, Beverley. Second, H. Yardley.
BARBS.—First, Rev. W. J. Mellor. Second, H. Yardley.
NUNS.—First, T. Burgess. Second, H. Yardley.
TRUMPETERS.—First, H. Yardley. Second, C. Addey. Highly Commended, C. Gravil, jun.; C. Addey.
ANY OTHER VARIETY.—First, H. Yardley (Ice Pigeons). Second, F. Wait, Sparkbrook (Ural Ice). Highly Commended, Mrs. Cross, Brigg; H. Yardley; F. Wait (German Toy); T. Burgess; J. W. Thompson, Hull (Friezelands).
SELLING CLASS (Any variety).—First and Second, F. Waitt (Hyacinths, Lahores). Third, T. Statters, Hull (Tumblers). Highly Commended, H. Yardley. Commended, H. Yardley; J. W. Harrison (Pouters).
Extra Prize for best pen of Pigeons.—T. Elrington (White Fantails.)

CAGE BIRDS.

CANARY (Yellow).—*Cock.*—First, Miss A. Dundas, Epworth. Second, Messrs. Smith & Naylor, Epworth.
CANARY (Buff).—*Cock.*—First, Messrs. Smith & Naylor. Second, J. M. Haycroft.
CANARY (Green or Variegated).—First, Messrs Hanson & Wagstaff. Second, C. Peart, Crowle. Commended, Miss Read, Epworth.
GOLDFINCH.—*Cock.*—First, C. Chappel, Thorne. Second, G. Yates. Highly Commended, J. Boyes, Epworth.
LINNET.—*Cock.*—First, Master R. Maw. Second, Master W. H. Butterfield, Epworth. Commended, R. Jackson, Wells.
ANY OTHER VARIETY OF CAGE BIRDS.—First, Miss Read (Parrot). Second, T. W. Dawson, Epworth (Goldfinch Mule). Third, W. Hebditch, Epworth (Thrush). Fourth, D. Daubney (Parrot). Commended, W. Riley, Crowle (Goldfinch Mule).

RABBITS.

ANY COLOUR.—First, C. Gravil, jun. Second, Messrs. Hanson & Wagstaff. Highly Commended, R. Stephenson, Beverley; C. J. Matthews, Epworth.
BUCK.—First E. Roberts, Thorne. Second, Messrs. Hanson & Wagstaff. Highly Commended, H. Yardley; A. Sales, Belton. Commended, E. Dimmock, Bull-hassocks.
DOE.—First, Messrs. Hanson & Wagstaff. Second, H. Yardley. Highly Commended, G. Lindley.

JUDGES.—*Poultry, Rabbits, Singing Birds, and Pigeons:* E. Hewitt, Esq., Sparkbrook, Birmingham, and J. Richardson, Esq., Thorne.

NEWCHURCH POULTRY EXHIBITION.

(*From a Correspondent.*)

THIS Exhibition was held in connection with the Newchurch Agricultural Show on the 29th of April, which, although the morning was dull and foggy, proved a beautiful spring day.

The pens were arranged in the left-hand corner of the Show ground. Some portion of the pens were two rows in height, but those placed below, by the good management of the Committee, were devoted to Turkeys, Geese, and Ducks. Great praise is due to the Secretary, Mr. Lonsdale, and the Committee, for their indefatigable exertions in performing their duties.

The number of entries was nearly one hundred, and although this may appear to some as being rather small, there were birds of as high merit exhibited as any seen at larger shows.

The class for single *Game* cocks, including all varieties, contained some first-class birds. The first prize was awarded to a magnificent Black Red, closely pressed by a splendid Brown Red. Both these birds are the property of C. W. Brierley, Esq., of Middleton, and were shown in first-rate condition. In the next class, for single *Game Bantam* cocks, the same gentleman succeeded in taking both prizes. In the class for Bantam cock and hen, all varieties competed, including Game Bantams. This class contained the most entries of any class in the Show, and was one of the best. The first prize was taken by a magnificent pen of Black, which was much admired, and exhibited in excellent plumage. A first-class pen of Black Red Game was second, closely pressed by a pen of Silver-laced Sebrights. Next to this came the class for Game cock and hen, any age or colour. Black Reds took the first prize, and Brown Reds the second. In the *Dorking* class there were but two entries, the first prize being easily won by a pen of rose-combed birds. The plumage of the cock in this pen was deficient, owing to his feathers having been picked by hens; but his companion was a first-rate pullet. In *Cochins* of any age or colour there was a magnificent display; in fact, this class was probably the best in the Show, Buffs maintaining the high position they so honourably deserve by taking both first and second prizes.

Black *Spanish* constituted but a poor class, and with the exception of the hen in the first-prize pen, the rest were only moderate. In *Brahma Pootras* some very good birds were exhibited, the hens in the two pens being of the real type of a true-bred Brahma. Of *Hamburghs* there might have been a better exhibition, considering the neighbourhood of the Shew. There were but three entries for Golden-pencilled. The prize birds were of fair average merit. Only one pen of Silver-pencilled was exhibited. The Golden-spangled hens were decidedly better than the cocks, and with the exception of the prize birds there was nothing to merit great praise; and in Silver-spangled there was little difference between the prize pens.

Of *Turkeys*, *Geese*, and *Ducks* there was a fair entry, the prize birds far outdistancing their competitors. Mr. Leech, of Rochdale, was the most successful exhibitor in these classes, by winning all the first prizes.

The Arbitrator deserved much credit for the careful and judicious manner in which he decided his awards, a list of which is appended.

SINGLE GAME COCK (Any age or colour).—First and Second, C. W. Brierley. Highly Commended, J. Foulds, Burnley; C. W. Brierley; E. Aykroyd, Bradford.
GAME BANTAM COCK.—First and Second, C. W. Brierley. Highly Commended, G. Birtwistle, Haslingden; F. J. Astbury, Prestwich.
BANTAM (Any variety).—First, W. A. Taylor, Manchester. Second, C. W. Brierley. Highly Commended, T. Birtwistle, Haslingden; Messrs. S. & R. Ashton, Mottram.
GAME.—First, C. W. Brierley. Second, E. Aykroyd. Highly Commended, C. W. Brierley.
DORKINGS.—First, W. A. Taylor. Second, J. Stott, Healy.
COCHIN-CHINA.—First, W. A. Taylor. Second, C. W. Brierley. Highly Commended, C. W. Brierley.
SPANISH.—First, J. H. Hardman, Rawtenstall. Second, T. Townsend.
BRAHMA POOTRA.—First and Second, W. Hargreaves, Bacup. Highly Commended, D. Haworth, Rochdale; J. H. Pickles, Todmorden.
HAMBURGHS (Golden-pencilled).—First, N. Marlor, Denton. Second, W. Parkinson, Staghills.
HAMBURGHS (Silver-pencilled).—Prize, W. Wilson, Laund.
HAMBURGHS (Golden-spangled).—First, N. Marlor. Second, Messrs. S. & R. Ashton. Highly Commended, N. Marlor.
HAMBURGHS (Silver-spangled).—First, — Smalley, Blackburn. Second and Highly Commended, J. A. Taylor, Manchester.
TURKEYS.—First, E. Leech, Rochdale. Second, T. Houlker, Blackburn.
GEESE.—First, E. Leech. Second, T. Houlker.
DUCKS (Aylesbury).—First and Second, E. Leech.
DUCKS (Rouen).—First, E. Leech. Second, T. Houlker.

Mr. Richard Teebay, Fulwood, Preston, officiated as Judge.

AYR POULTRY SHOW.

(*From a Correspondent.*)

THIS Show was held in connection with that of the Ayrshire Agricultural Association on the 1st inst., and was open to all Scotland. The day being very fine there was a large concourse of spectators, upwards of £150 being drawn for admission. The pens were arranged on stands in rows, enabling the visitors to see every bird in the Exhibition.

Of *Spanish*, the first-prize pen was the best I have seen for some time, the others were also good. The Grey *Dorkings* mustered strongly and were good, nor were the *Polands* and *Cochin-Chinas* less worthy of high praise. The *Scotch Greys* were a good class, but I was sorry to see some of the best pens passed over and inferior birds gain the prizes. The hen in the second-prize pen was far too small and showed Dorking toes, even the whole pen was much inferior to many a pen that never was looked at.

The following is a list of the prizes awarded:—

SPANISH (Black).—First, J. Sharp, Johnstone. Second, C. M'Intyre, Ochiltree Mills, Ochiltree. Third, A. Stewart, Coodham, Symington. Fourth, C. M'Intyre.
DORKINGS (Coloured).—First, J. H. Macnab, South Arthurlie, Barrhead. Second, Major-General Burnett, Gadfirth, Coylton. Third, J. Fleming, Kilkerran House, Maybole. Fourth, O. Fairley, Coodham, Symington.
DORKINGS (White).—First, J. Aitken, Paisley. Second, J. R. Aitken, Paisley. Third, P. Aitken, Loans, Troon. Fourth, J. Aitken.
HAMBURGHS (Golden-spangled).—First, J. Jardine, Millane, Kilmarnock. Second, R. Cunningham, Stewarton. Third, H. M'Latchie, Whitefordhill, Ayr. Fourth, R. Cunningham.
HAMBURGHS (Golden-pencilled).—First, A. M'Quater, Wallacetown. Second, W. Neilson, Johnstone.
HAMBURGHS (Silver-spangled).—First, J. Stewart, South Arthurlie, Barrhead. Second, J. Glass, Wallacetown. Third, B. Gairdner, Auchincruive Gates, St. Quivox. Fourth, the Hon. Mrs. Vernon, Mount-Charles, Ayr.
HAMBURGHS (Silver-pencilled).—First, R. Cunningham. Second, J. Paul, Glasgow. Third, J. Paul. Fourth, Countess of Eglinton and Winton.
COCHIN-CHINAS.—First, Countess of Eglinton. Second, R. Cron, Dalmellington. Third, G. Girdwood, Ayr. Fourth, R. Cunningham.
GAME.—First, A. Gibb, Wallacetown. Second, J. Macnab. Third, J. Sharp. Fourth, A. Morrison, Glasgow.
SCOTCH GREYS.—First, J. Paul, Glasgow. Second, H. Smith, North Woodside, Kilwinning. Fourth, J. Macnab.
BRAHMA POOTRA.—First, J. T. Gordon, Blackhouse, Ayr. Second, W. Young, Highfield, St. Quivox. Third, D. Davidson, Dalmellington. Fourth, J. Wilson, Peggrysshill, Ayr.
POLISH (or any other breeds not before mentioned).—First, Countess of Eglinton. Second, J. Glass. Third, Miss Fairlie, South Lodge, Ayr. Fourth, W. Dunlop, Stewarton.
TURKEYS.—First, Major-General Burnett. Second, J. Fleming, Maybole. Third, Miss E. Fairlie, Coodham, Symington. Fourth, T. Neil, Wes Doura, Tarholton.

BEES MISTAKING THEIR HIVES.

LAST Friday (April 26th) I moved nine stocks of bees into a house which I have lately built on purpose to receive them. The landing-stages are each 9 inches broad by 12 inches long; these I have left unpainted, though the front of the house is coloured green. The bees have entrance to their hives by holes three-quarters of an inch broad, by three-quarters of an inch deep. Although, however, three days have now passed since I moved the hives, the bees do not seem to be at all certain on which landing-board to alight, and in consequence they frequently make a mistake, and pay the penalty by being pitched overboard, in many cases dead. Yesterday alone, I counted upwards of a hundred dead on the ground. I should feel much obliged if you will give me your advice as to whether the slaughter will gradually diminish as the bees become more accustomed to their house, or whether I should in any way

distinguish the boards by painting or otherwise. I may add, that on the day after I moved the hives, I placed pieces of brick, wood, &c., on the stages, hoping in this way to stop the slaughter, but have not succeeded.—W. Leake.

[The entrances to your bee-house are probably somewhat near together, and similar in appearance. The mistake, and the contests resulting from them which you notice, will probably diminish in number as the bees become accustomed to their new abode; but it will be well worth while to furnish every alternate doorway with a distinguishing porch, which should be painted in such colours as may furnish the strongest contrast with that of the bee-house, and with each other.]

MEAD OR METHEGLIN.

Anticipating a good honey harvest this year, I have been searching all my bee books for the best receipt for making mead or metheglin, and finding scarcely two agree in recommending the same proportions, I venture to ask the advice of others more experienced than myself. Sir J. More says one gallon of water to one gallon of honey; Bevan, six gallons of water to one gallon of honey; Keys, one gallon of water to 3 lbs. or 4 lbs. of honey, &c.

Amid these distracting counsels to whom can appeal be better made, than to the Editors of The Journal of Horticulture? from whom we may, perhaps, receive accurate, and, therefore, valuable hints.—W. H. S., *Yaxley*.

[We shall be glad of advice on this point from any of our correspondents who had experience in the manufacture of mead. The following receipt is extracted from "The American Bee Journal:"—"Take 120 lbs. of soft water and 20 lbs. of clear strained honey. Mix them well in a kettle of suitable size, and boil down the mixture to 80 lbs., skimming it carefully while boiling, then pour it into a wooden vessel, and let it stand to cool. While yet lukewarm put in a pint of good stock yeast, stir thoroughly, and pour the whole into an oaken barrel (an empty rum or wine cask is the most suitable), which should be sufficiently large to contain ten gallons. The liquor remaining over is to be put in bottles and used to fill up the barrel or cask during fermentation. Now put into a small linen bag ¼ oz. cinnamon, ¼ oz. grains of paradise, ¼ oz. pepper, ½ oz. ginger, ¼ oz. cloves coarsely pulverised, and a large handful of dried elder blossoms. Suspend the bag by a string in the liquor through the bunghole, and place the barrel in a dry, airy cellar. Let the fermentation proceed during six weeks, keeping the barrel constantly full from the contents of the bottles. Then, after gently removing the bag, rack off the clear liquor into another cask, and close the bunghole lightly. Fermentation will still proceed moderately for six or eight weeks before the liquor becomes clear. It must then be carefully racked off into bottles and well corked. The lees remaining in the cask may be used in the preparation of an additional supply. Mead thus prepared will keep for years. It is of a clear amber tinge, and has a vinous taste."]

GOLD FISH.

In reply to "W. W. E. W." (see page 288), I wish to tell him that he will find that it is the trout that kills his fish.

Having had many kinds of fish together in a large glass tank, I have been able to observe their habits. I find that the common trout is the most ferocious of all the fish I have kept. It will not allow any other fish to approach its hiding-place. No sooner does the poor gold fish pass by than out the trout comes, savagely takes hold of tail or fin, and tears part of the fin away. A continuance of this treatment for a few weeks causes the tail part to decay, and a kind of fungus comes on the tail, which seems to be quite useless, and after some weeks the fish dies. Beetles and other water insects will soon cause its remains to disappear.

The trout is very cunning, and the only fish that seems to see through the glass sides of the tank, for as soon as I approach it darts under its rock, generally in the same place, although it has good places to hide near. It is quite a match for the stickleback, even if they are of the same size. I have seen these two fight like bulldogs. I may add I am compelled to keep the two species separate, by placing a wire netting across the tank, and then I have frequently seen master trout leap the fence.—Hawkins.

[Not only do trout in a pond, attack the gold fish as described by our correspondent that they do in a glass aquavivarium, but they eat the spawn and young fry of the gold fish. We have known gold fish thrive and breed in a pond similar to that mentioned by "W. W. E. W.," and they especially did so after water lilies and other aquatic plants were planted in the pond.—Eds.]

OUR LETTER BOX.

Malay Fowls (*J. C.*).—All that your friends have said about them is quite true, and to their characteristics we would add that we think them the ugliest of all fowls. The Rev. G. Ifastler, Stillingfleet Vicarage, York, is to you the nearest breeder of them. If you wish to keep an unusual variety, have Houdans, which have the additional merit of being excellent birds as layers and for table use. Mr. Baily, 113, Mount Street, Grosvenor Square, could supply you.

Malt Combs for Fowls (*John Tindall*).—You can only attain them of a maltster, and we do not know of one nearer to you than Ware.

Death of Dorking Cock (*A. B. C.*).—It is a very common thing for cocks to have dark combs when they have a difficulty in crowing; both proceed from cold, but death from this cause is lingering. Our own opinion is, that most of the diseases of chickens are caused by parasites, and the remedy for them is camphor. If the apparent worm in the roof of the mouth was one in reality, contact with camphor would have killed it. In these cases, stimulants are the proper treatment to relieve, and the free administration of camphor is the cure.

Diseased Liver in Fowls (*M. M.*).—The appearances you describe, wasting of flesh, and ulcers on the liver, are common in fowls that have been overfed to induce laying. Such treatment always induces dropsy or liver disease, and generally both before it becomes fatal. Where no undue feeding has taken place, it will result from age. Great layers do not last so long as those that are less productive. Potatoes have a tendency to produce liver disease; and great alternations in feeding, a high dietary for a time, and then a low one, lay the foundations of disease. We, however, believe you will find the sufferers are the aged among your stock.

Hatching Season—Spanish Fowls Losing their Feathers (*M. D.*).—You have not neighbour's fare so far as Brahmas are concerned. They have hatched well generally. Other varieties have not. Our experience of hatching this season is that it is a bad one to the present time; but better weather will give better hatching. We have wanted warm nights. Your Spanish fowls want grass, fresh earth, and green food. Lettuce is the best. They pick the feathers from a craving for something they do not get. After the feathers, they will eat the cock's face, and will strip each other. Cut large sods of growing grass with plenty of fresh earth to them, and supply them liberally every day.

Various (*J. S.*).—We are not sure you should not take away two of the cocks, you must take away one. Take away the hens that are sickly, give them castor oil, and rub the naked parts with sulphur ointment. Give them plenty of lettuce to eat, and let them have access to grass. Feed on meal only for a time. We cannot tell you the quantity of food fowls should eat, as it depends so much on that which they get in their wanderings. We are not friendly to allowancing poultry. Let them always eat till they leave off, but let no food lie about. They eat more at some times than at others. It will be, however, found that by feeding only while the birds will run after the food, less will be consumed than when a given quantity is allowed. The birds will also be in better health.

Tumours on Turkey (*S. F.*).—We have never cured the disorder you name. We have had it in fowls, and it has always increased till the birds died. None have ever laid while suffering from it, and on opening the body it was found to be a mass of disease, originating apparently with the organs of laying. The lumps we have seen were between the skin and the flesh, and could be moved. They contained a cheesy matter.

Food for Young Turkeys (*Subscriber*).—The best answer we can give is the following, from our "Poultry-keepers' Manual:"—"The first diet offered to Turkey chicks should consist of eggs boiled hard and finely minced, or curd with bread-crumbs and the green part of onions, parsley, &c., chopped very small, and mixed together so as to form a loose crumby paste; oatmeal with a little water may also be given. They will require water; but this should be put into a very shallow vessel, so as to insure against the danger of the chicks getting wet."

Carbonnier's Incubator (*Trent Side*).—We do not know where it can be purchased. If of any special merit it should be advertised.

Error.—At page 320, column 2, line 12 from bottom, we ought to have said "*not* prefer."

Preventing the Loss of Swarms (*S. S.*).—There is no mode of placing a hive and enticing bees into it which can be relied upon to prevent the loss of swarms. You may, however, drive an artificial swarm from your Ligurians, with the aid of one of your stocks of common bees, in the manner described by us in No. 271 of our New Series. This should be done as soon as both hives become crowded with bees.

Ligurians in Ireland (*Squib, Co. Kildare*).—The word "*sealed*" was accidentally omitted from the last line of our reply to your letter in our last Number. It should read thus:—"a tolerable quantity of sealed drone brood." We shall be glad to receive particulars of the future progress of Ligurians in the Emerald Isle.

Obtaining Artificial Swarms with Frame Hives of Different Construction (*J. C. A.*).—We fear that in your predicament we can only advise you to endeavour to follow the example of the distinguished editor of the "Extinswill Gazette" who qualified himself for writing on the somewhat abstruse subject of "Chinese Metaphysics," by turning to his Encyclopædia, perusing the articles headed "China" and "Metaphysics," and combining the information thus obtained. In other words, we recommend you to refer to Mr. Woodbury's articles on "Artificial Swarms," which appeared in Nos. 161, 162, and 217 of our New Series; then peruse the one on "Propagating Ligurians" in the Journal of the 11th ult., and combine and make use of as much of the information thus obtained as the circumstances and the extent of your apiarian attainments will admit. When using frame hives of different construction nearly all the advantages of frames are, of course, forfeited, and the easiest and simplest plan would probably be to treat them as common hives; but something may yet be done by cutting combs out of one set of frames and fitting them into the others. How much that "something" may amount to must, however, depend entirely on the skill of the bee-keeper.

WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 16—22, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years.	Sun Rises.	Sun Sets.	Mooo Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
							m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
16	Th	Meeting of Royal Society, 8.30 P.M.	66.4	42.9	54.6	15	9 af 4	43 af 7	31 af 5	30 af 3	12	3 51	136
17	F		65.9	41.6	55.7	16	8 4	45 7	34 6	58 3	13	3 50	137
18	S	Royal Hort. Society, Show and Promenade.	65.8	42.5	54.1	17	6 4	46 7	36 7	28 4	O	3 48	138
19	Sun	4 SUNDAY AFTER EASTER.	66.4	42.9	54.7	13	5 4	47 7	34 8	0 5	15	3 46	139
20	M	Royal Hort. Society, Special Fête.	67.0	43.5	55.2	19	4 4	49 7	28 9	37 5	16	3 44	140
21	Tu	Royal Hort. Soc., Exhibition of Tricolor Pelargoniums, Fruit, Floral, & General	66.6	45.3	56.0	18	2 4	50 7	16 10	20 6	17	3 41	141
22	W	Meeting of Society of Arts, 8 P.M. [Meetg.	65.9	42.9	54 4	17	1 4	52 7	58 10	9 7	18	3 37	142

From observations taken near London during the last forty years, the average day temperature of the week is 66.3°; and its night temperature 43.1°. The greatest heat was 89°, on the 22nd, 1847; and the lowest cold 30°, on the 18th and 19th, 1854; 20th, 1853; and 19th and 20th, 1856. The greatest fall of rain was 0.58 inch

PARIS UNIVERSAL EXHIBITION.

A DAY AT BILLANCOURT.

THE Seine as it flows past Paris forms several islands but little raised above the water level, and which are frequently inundated during the winter months. Of these Billancourt is one. When first it was proposed to devote it to a garden where the Parisian market gardeners should display their skill in cultivation, it was objected to the scheme that without an Imperial guarantee the cultivator could not risk the necessary labour against the overflow to be expected after the rains of last autumn. It was, therefore, eventually turned into a sort of "annexe" or adjunct for the agricultural machines, for which space failed in the main building.

The island is not unsuited either by distance or by natural features for this purpose, being flat and accessible to heavy machines, and adjoining the river. For some time the inundations which wearied the Commissioners have subsided, and something, though as yet extremely inadequate, has been done in the way of ornament. As to the valuable machinery it is safe under commodious sheds, and the climate is too fine to cause alarm.

The means of reaching Billancourt, however, have not been made so perfect as they may eventually become, and visitors would do well to be cautious how they use them. One of the Parisian papers, *L'Epoque*, comments on this deficiency thus:—"The omnibus (a small and unsuitable vehicle), and the river steamer (a boat of small power, but having a good awning), start at the same moment, in consequence of which the visitor often misses both. In despair he is driven to travel over two kilomètres (about 1¼ mile) of dusty road under a burning sun. He returns in the same way, and, out of breath, arrives at the station in time to see the smoke disappearing under the bridge." In fact, the much-vaunted system of Parisian omnibus correspondence is, in this case, one cause of vexatious delay and fatigue.

My own experience was somewhat similar; for, starting from the station of the Fernes, not far from the Arc de Triomphe, I arrived shortly at the Point du Jour station (ominous name "break of day"), and found no omnibus whatever going in the direction of Billancourt; so I sat in the shade, till refreshed with beer, I "took," as our neighbour's say, "courage in both hands," and under a tropical sun proceeded to the island on foot. The heat of that hour would have astonished any one. The road is extremely white and dusty, flat, and of the market-garden character, though laid out already in building lots. The soil is a chalky loam, but porous, and with access to water, would, by enriching, bear good garden crops, or Vines, many of which we see on the distant slopes. The whole is but little above the water level, but the splendid climate supplies many defects.

At last with weary feet I reached the bridge over the river leading to the island. The stream is of a green grey hue, but not turbid, and runs at about three miles an hour at this season. I could see that it had been 4 or 5 feet above the present level during the winter floods. The scenery is tame, and the absence of steamers and pleasure boats contributes much to its monotonous character. Tall masts, from which tricolor pennons were flying, gave a transitory though theatrical gaiety to the bridge. To an English eye this seems tawdry, but it is not so very easy to render buildings suitable for the exhibition of machinery or cattle interesting.

After paying one sous "*pour le pont, Monsieur*," I found myself between two ugly rows of Norwegian-looking sheds, seemingly destined for the sale of beer, wine, and spirits. These, also, had their appropriate flags, and appropriate inmates too. Certainly the increase of drunken men in the streets of Paris of late years is conspicuous, and Emile Girardin in his journal notices the crowds of workmen round the English restaurants, and ironically says they must be strangers whom the march of civilisation has converted into topers and Frenchmen, so like a native is their language.

The politeness of the Acting Superintendent spared me much time and fatigue under that fierce sun, without means of obtaining shade save among the drinking-sheds. Those to whose lot it fell to be present at the earlier stages of the Exhibition building know how much invaluable time they expended in finding out their special objects.

The visitor on entering will find on his left-hand a space devoted to horticultural objects, which are worthy of his notice. The section devoted to these is in the Park of the Exhibition near the Ecole Militaire, and contains the principal objects of this department. The visitor, however, whose chief desire is to inspect some of the machinery or cattle, may thus examine some fine specimens of trained trees shown by Baltet, of Troyes, who is considered here a clever cultivator. The trees shown by him are enclosed, and called the Emperor's Garden. Some fine diagonal Pear cordons by Professor Gressent are worth looking at, as he also has a high reputation. Specimens of neat little Apple cordons as edgings may be seen in front of them also; and a method of bending Pear shoots by Oudin, of Lisieux, is practical and ingenious. Shrubs were still being planted, and walks made on the island, which if made permanent will be a great improvement. A small collection of stocks was exhibited, among which were the following:—Quinces from Angers, Lisieux, Orleans, and Portugal; the Paradise, Myrobolan, St. Julien, the Mahaleb, and Prunus spinosa. There was also a collection of French Hops, as well as a very interesting show of Vines trained for vineyards, from which the English visitor may gather an idea for training Vines under ground vineries; some curved specimens are particularly recommended to his notice, as also the very old stumps still in good bearing condition.

showing some excellent vineyard forms. Some clean-looking high standards of Pears, Apples, &c., are conspicuous.

At this period the mid-day sun was most trying; the workmen in blue linen blouses had their pocket-handkerchiefs spread, Indian fashion, over their caps, and I was glad to throw myself under some Poplars near the stream. All round, the hills near Paris, thick with villas, Vines, and clumps of trees, were under a thick haze of heat, and a sky without a cloud.

But this was not the way to become acquainted with the other objects exhibited, and Billancourt is chiefly destined for a future dog and cattle show, besides the machinery and agricultural implements now there. So I returned towards these, and found a group of Englishmen watching the ascent of a clumsy French cultivator up a short path. The machine groaned and quivered as the steam was raised to a sufficient strength, but by obliquing, as an old horse will up a hill, the cultivator managed to do it, and then rumbled down the walk to a distant part of the island, where I speedily saw it at work on the soil. Further on I came on a white smockfrocked Englishman in an agonised struggle to equip an English horse in, to him, a bewildering maze of white French harness. Very international looked Diomede's head in his Gallican gear, with flowing tassels, and the good brute seemed somewhat downcast withal. "Coom oup" in the broadest Somersetshire, then some fearful insular denunciation unfit for these pages. "It wunna draw;" then a pull at the bellyband; but, after all, it did not appear a success. I thought the Norwegian sheds would soon have a thirsty occupant, but ventured mildly to ask what Somerset thought of the French cultivator, not deeming my own opinion final. After another fierce struggle with the white harness, I was informed that four horses would do better. This is conclusive to my mind.

Then the sheds were examined, and some foreigners criticising our hay-making machines, asked for the "address of my house," as I was reposing on some less formidable engines.

Ruston, Proctor, & Co.; Clayton; Robey; Ransomes & Sims; Howard; Smyth & Sons; Picksley & Sims; and Garrett, are here well represented in many branches.

Canada shows ploughs; the United States their excellent reaping machines. The Belgian department is very fine, ranking next to the British, with portable engines. The French threshing machines are more simple than ours, and thus more suitable for small farms. The engines driving them are of less force, lighter, and better suited for transit over bad roads. In drills the French makers often approach suspiciously near to our own; but in spite of this, in workmanship and design, they cannot be compared with our best manufacturers.

There were a few waggonettes shown, one was priced at £45, and was dear at that sum. Some wheels of fine execution were also dear. They were numbered according to force, from 1 to 10, one about 30 inches in height being estimated at "force 2," and priced forty-one francs.

Further on the visitor finds at present a cattle show, which will be greatly developed hereafter. The sheds are airy, and a single line of rails embedded in the asphalte runs down the middle. Dutch, Norman, and very small Breton cows are here, and are very good. The last were reported to me as producing some fabulous amount of butter, which our Channel Island experience did not at all confirm. The cattle were in high condition, exhibiting fine broad backs, and there were some pretty cream-coloured specimens of natives crossed with our short-horned breed.

No doubt in the summer show something will be visible here. At present much is in an incomplete state. There are no authenticated names as yet over the stalls, and little reliance is to be placed on the accounts of the attendants. I saw no English cattle here, nor any from the Channel Islands: such are coming later. There are also no English trees here of any description.

By this time I had reached the melting point, and took refuge in the steamer with many others. None but business people were there, and no ladies of course. A delay of about three-quarters of an hour took place, and at 3 P.M. (the visitor should note this, and select this mode of return conveyance), we began to ascend the stream at about a walking pace. The current will try some of our boating men's prowess, but the river will be much lower by July. The Seine is uninteresting enough, but there is a very comfortable awning over the deck of the steamer. The return journey was thus far more agreeable, and, no doubt, ladies will choose this way, as we landed close to the Exhibition building.—T. C. Bréhaut.

THE GARSTON VINEYARD.

(*Concluded from page* 262.)

On resuming our walk through the house of mixed Vines, one is struck with the superiority of the Black Alicante over all other Grapes. There is scarcely a house in the Garston Vineyard which does not contain several Vines of this most valuable Grape. See it where you will, no matter in what aspect, it has the same beautifully finished appearance. The great advantage which it has over Lady Downe's is its free setting. Lady Downe's is equally valuable as a late-keeping Grape, but very often it is a shy setter, and the bunches are in consequence very ragged; the best plan to adopt is, when it is in flower, to give a gentle skiff with the syringe. In 1864 I exhibited at the Crystal Palace September Show a basketful of Lady Downe's Grapes, weighing 36 lbs.; they were as fine as any I have ever seen of this variety, both in point of colour and evenness of berry; the flavour was also all that could be desired. The house in which they were grown was started on the 1st of December, 1863; they were ripe in the second week in June; and from that time up to the first week in September scarcely a berry shrivelled, and the colour remained as perfect as possible on several bunches which were left on the Vines till the end of October, or eleven months after they were started. I just mention this to show that to have Lady Downe's in perfection it is necessary to let it hang a long time after it is ripe; and to ensure its keeping well throughout the winter it should be ripe by the second week in October. If it is well ripened by that time, and the roots are in a good state, the bunches will hang perfectly fresh and plump till the end of February or middle of March. The same may be said in favour of Black Alicante.

The next Vine that met my view was a Barbarossa; this had three bunches on it. One of them measured 23 inches long and 16 inches across the shoulders, and its weight could not be less than 13 lbs.; it was not, perhaps, quite so well coloured as some of the others, but it was a splendidly-formed bunch, and would doubtless have been well finished in point of colour had the autumn been more favourable.

The next Vine was a Black Alicante; this had five large bunches, which would average 4½ lbs. each. In one of the bunches I noticed a berry of extraordinary proportions, as large as the largest Kirke's Plum, and, like the rest of the berries, as black as Sloes. I thought it might be worth while to save the seeds, to see whether the Vines raised from them would produce berries generally of like proportions. The berry was not like those which are often met with—double, but perfect in itself. I have since forgot to ask Mr. Meredith if he saved the seed, and if so, what number of seeds the berry contained.

On one Muscat of Alexandria Vine in this house I noticed eight beautiful bunches of fruit; they would average not less than 3 lbs. each, and exhibited that beautiful amber shade indicative of the highest state of perfection in this variety. The berries were large and very even. The neighbouring Vine to this was a Black Alicante, which had five splendid bunches averaging 4½ lbs. One of these, at the top of the Vine, I should think would not weigh less than 7 lbs.; it was a perfect model, the berries being beautifully coloured, and as even as if cast in a mould. Next to this I saw a White Tokay with seven bunches, averaging about 3½ lbs.; these were also beautifully finished. The next Vine I passed was Child of Hale with three bunches, which together would weigh not less than 32 lbs. This Vine produces some immense bunches, but there appears to be some difficulty in ripening them properly. Like the Lady Downe's Grape, I think the variety must be started earlier in the season to have it in perfection.

Altogether there are fifty-seven Vines in this house. September is the best month to see it in perfection. Mr. Meredith told me on leaving it that he had never before experienced so much difficulty in colouring Grapes as he had done that autumn.

We next entered what is called the north house; and many good Grape-growers, had they seen this splendid houseful of Grapes, would have scarcely believed such wonderful results possible in a building of such simple construction, and situated in an aspect one would think so unsuited to the growth and well-being of the Vine; but here were Grapes, principally Black Alicante, Lady Downe's, and Barbarossa, as fine in bunch, having the same evenness of berry, and in colour quite as good as any in the house I had just left, and of which the aspect is due south. The house is 128 feet long by 17 feet wide, and the roof, which is very flat, is glazed with Hartley's

rough plate glass. There is a row of large trees which overshadow this house very much, so that the light is very much obscured. The house is situated close to a brook which runs past the Vineyard. The greatest evil which Mr. Meredith has to contend with is the dampness caused by the proximity of the house to the brook; but after seeing such a houseful of Grapes as this, surrounded by so many disadvantages, no one need hesitate a moment to build a vinery in any aspect. I would defy any one to pick out a situation to all appearance more unsuitable than that which this vinery occupies; not a gleam of sunshine can by any chance fall on it. There were several Trebbiano Vines, each bearing three fine bunches, in point of colour, form, and evenness of berry, nearly as good as the splendid bunches exhibited by Mr. Drewett, at the St. James's Hall Show, some years ago. The Alicante and Lady Downe's were also remarkably well coloured.

This house was originally used as a potting-shed, then pot Vines were placed in it, and about four years ago Mr. Meredith introduced three rows of four-inch pipes, and made a border about 5 feet wide and 4½ deep, and this is all these Vines have to grow in at present; but he contemplates adding another 5 feet of border on the inside, and a border on the outside as well. This house, though evidently not built with the idea of growing show Grapes in it, yet contained at the time of my visit many splendid bunches that would have graced any exhibition. There were several bunches of Barbarossa, weighing from 6 to 12 lbs.; these were black, and the berries large and even. Child of Hale was also well represented in this house; one bunch measured 15 inches in length and 13 across the shoulders. Bunches of Black Alicante, weighing from 2½ to 4 lbs. might also be counted by dozens. There is a light about 18 inches deep along the front of the house. This is opened by means of a spindle and lever; the top lights are opened in a similar manner. I must say I was very reluctant to leave this house; but time was pressing, and I had several others to look through, and two of these are undoubtedly the finest vineries in Europe. These I shall proceed with after passing through two small houses. One of these, a Black Hamburgh house, is very much elevated above the general ground level. Here the borders cannot be much less than 6 feet deep—inside. This was the first vinery Mr. Meredith ever possessed. It was built on a small place which he at first occupied near his present establishment. The Vines had been planted, previous to their removal with the house, about two years; they were carefully taken from their original position and planted where they now remain, and from them Mr. Meredith has cut some of his best Black Hamburghs for the early London exhibitions. The deep-border system, with judicious care and proper management, appears to suit the Vines well. Their present appearance would warrant one in taking a fifty-years lease of their lives, if they were afterwards managed with a similar amount of skill. At the time of my visit (early in October), all the foliage had fallen, and Mr. Meredith was going to prune the Vines soon after I was there. I hear they have started better than ever this spring, and that they give promise of greater results this season than they have afforded in previous years. This house is so situated that extensive outside borders cannot be added to it: hence the necessity of making the border of extra depth.

Adjoining the Black Hamburgh house Mr. Meredith has built what I consider is the best and most useful house I ever saw for growing a few early Vines. He told me he had built it with the odds and ends left after the completion of the large range which he built last spring. The house is span-roofed and very substantial. There is a lantern above the ridge of the roof, and the sides are opened by leverage from the centre path; there are also side lights 2 feet wide, which all open very easily. No outside border can be formed to this house, but ample provision is made for a good deep border inside. The four walls are built about 6 feet 6 inches above the general ground level. The whole of the space inside will be occupied with the border up to the wall-plate level.

After leaving this structure we cross the yard, passing the bothies, stabling, workshops, &c., on our way towards the eastern extremity of Mr. Meredith's establishment. This brings us into a portion of the ground which is at present devoted principally to fruit trees. On a part of it stand two of the finest vineries ever built. A vast amount of interest will be attached to these houses during the next ten years, for in them Mr. Meredith has planted every known kind of Grape that is worth growing. He has also numerous experiments in progress. Various kinds of Grapes are grafted and inarched on every conceivable variety of stock, and it may therefore be concluded that his experiments when completed will be of great benefit to Vine-cultivators generally. I believe Mr. Meredith is only waiting to see the result of these experiments to complete his elaborate treatise on the Vine. This I am sure will be read with great interest by the gardening public, who will expect to find in it a vast amount of information which no one is better able to give. The two houses above referred to are span-roofed, and each 144 long by 26 feet wide. One of them is devoted to the growth of white Grapes, the other is for cultivating all the best black varieties. There is a path 6 feet wide through the centre of each house, and provision is made for heating the borders if it be found necessary to do so. The ends of the houses are due east and west, so that one-half of the span faces the south and the other is due north. The Vines are planted on each side of the house, and the border for each set of Vines is 10 feet wide, and about 5 feet deep. Both houses are built in the same manner, and with materials of the very best description; some idea of their stability may be formed when I state that they cost little short of £3000. The quantity of material used in their construction must have been enormous. They are fitted together in the strongest possible manner, yet there is nothing heavy-looking about them. The side walls or pillars are built about 5 feet 6 inches above the ground level; on these are placed solid blocks of stone, on which rests the wall-plate. The spaces between the pillars are filled up with loose bricks, which can be easily taken out so as to give the roots free access to the outside borders when the time shall have arrived for making these. The pillars are about 14 inches by 9, and the spaces between the pillars are about 20 inches wide. The side lights are 2 feet 6 inches high, and are easily opened and shut by means of a lever and spindle at intervals of about 50 feet. There is a similar contrivance for opening the ventilator in the roof. The perpendicular height from the level of the central path to the ridge is about 13 feet. There are six large tanks in each house for holding a supply of rain water; they are 10 feet long, 5 feet wide, and about 7 feet deep, and the whole of the water that falls on the roof of each house is conveyed into these cisterns by means of iron pipes. The borders in both houses have been made with great care, and the Vines are planted 2 feet apart. There are in each house 144 Vines, which have been planted three years; many of them were at the time of my visit carrying from 8 to 12 lbs. of Grapes, and most of them were bearing three or four bunches each. Had they been my Vines I should have waited till this season before I allowed them to bear such a crop, and Mr. Meredith himself thought he had been too hard on them; but to look at them one would think they were capable of bearing a much heavier crop. I think, however, that every care ought to be taken not to weaken the constitution of the Vine until it has stored up sufficient food to enable it to bear without injury a heavy crop of fruit.

In the house devoted to the cultivation of white Grapes, I noticed splendid examples of Foster's White Seedling, Child of Hale, Muscat of Alexandria, and White Tokay. The latter Mr. Meredith considers one of the most valuable white Grapes for late work. Many of these kinds were grafted on Black Hamburgh, others on Barbarossa; some on Lady Downe's, Black Alicante, and others, whilst many were on their own roots; so that Mr. Meredith will have every chance of proving each variety, both on its own roots and on stocks of various kinds. In this house I tasted a splendid seedling white Grape, which was certainly of first-rate quality; the bunch was large, and the berries very similar in appearance to those of the Muscat of Alexandria, whilst the flavour was rather more agreeable than in that variety generally. The berries appear to set very freely. We shall hear more of this fine Grape in due time. Mr. Meredith thinks it will prove a most welcome variety for early forcing. If, as I believe, it prove to have all the good qualities of the Muscat of Alexandria in point of appearance and flavour, with the free-setting qualities of the Black Hamburgh, it will be a most welcome addition to our early Grapes. I know that one is sometimes liable to be led astray by appearances, and the palate is not always alike; but I certainly thought at the time I never tasted such a luscious Grape.

I think I have enumerated all in this house likely to be of interest at the present moment. On each side of the path stood a row of splendid pot Vines, with canes from 10 to 15 feet long.

On entering the house in which all the best kinds of Black Grapes are planted, splendid examples of Black Alicante were

to be seen; also fine bunches of that handsome-looking Grape Gromier du Cantal, with its large amber-coloured berries, mottled with light purplish brown. How unfortunate it is that this handsome Grape has so little flavour to recommend it, its only good quality consisting in its beautiful appearance. Lady Downe's and Black Alicante were most conspicuous for the depth and richness of their colours. Judging from their appearance, there were many bunches of Alicante in this house that would weigh 5 or 6 lbs. each, and not a badly-formed or imperfectly-coloured berry could be seen. There were also some very fine bunches of Barbarossa in this house, and Jura Black Muscat looked very promising; the bunches of the latter were jet black. Mr. Meredith told me that it keeps well, and is likely to prove a valuable late Grape. Ingram's Hardy Prolific Muscat was also in very fine condition; this is certainly a most valuable Grape. Snow's Muscat Hamburgh [Black Muscat of Alexandria], grafted on Lady Downe's, was remarkably fine. I noticed another seedling, a black Grape; the berries were very large, but as it was not nearly ripe I had no chance of tasting it.

As I was leaving this splendid house Black Alicante again attracted my attention. Mr. Meredith here told me he had kept it perfectly fresh and plump for nearly ten months. I consider Mr. Meredith ought to have a medal of honour awarded him for re-introducing this valuable Grape into notice. He has been again successful in gaining the medal of honour at the Brussels Horticultural Exhibition, and it is gratifying to see the collection of medals he has had awarded him by the Continental as well as English horticultural societies.

There are at present six rows of four-inch piping in each of the houses just referred to, but it is intended to add more when the Vines are properly established. Extraordinary provision is made for outside borders to each house; Mr. Meredith particularly insists on this point. The two houses are built parallel with each other, and there is sufficient space between them for a 10-feet walk, and an 18 or 20-feet border for each house. The site intended for the outside borders is at present occupied by Strawberries.

I must here correct a statement which I made in the second column of page 261, that "each set of branches would have just 51 feet to travel from the main stem;" this only applies to one division of the house. The house is 202 feet long. Mr. Meredith might plant Muscat Grapes in one division, and Hamburghs or another black kind in the other.—J. Wills.

ROSE PROSPECTS.

A hasty look-in upon my good friend at Okeford Fitzpaine last month suggested naturally something about Roses; and as I have had various communications from different friends on the subject of their losses, a few words may not be uninteresting to the very numerous body of amateurs who delight in the queen of flowers. Mr. Radclyffe is beginning to feel at home, and is extending his operations. More walls are being built, and, if I mistake not, we shall learn something from him yet about fruit-growing. A large portion of his newly built wall fell during the winter, and this has very considerably interfered with his plans. As it was, however, I saw fine bloom on some maiden Peach trees on the cordon system, and should be glad if he be able to secure fruit from them, as I am not aware of such a feat having been yet achieved. His Strawberries were perfect, and if this lovely weather (May 3rd), continue, I think both he and all Strawberry-growers will have a successful season.

The effects of the frost, or rather the area affected by the frost of last January, seems to have been very various, and to have been in many instances quite different from that of some former ones. The valley of the Thames seems especially to have suffered; while the midland counties, as far as I can learn, have not met their usual fate, frost being generally more severe there than on the coast line. Hertfordshire also seems to have escaped pretty well; but I must give it as my humble opinion that we do not yet know the extent of our losses, as wood looks green, throws out a few shoots, and then begins to die away. This is more especially the case when, in cutting the shoot, the centre or pithy part looks brown—an indication, I fancy, that the frost has caught the Rose there. The losses, too, are very great already. Thus, I knew of one grower who has lost two thousand plants of Maréchal Niel, suggesting, I very much fear, that my early doubt as to its hardiness is too likely to be realised. Then, I know another grower who has lost every dormant bud in his grounds; and another who, on a piece of five acres of rather elevated ground, has very few left.

Mr. Radclyffe's Roses were, as might well be supposed for so experienced a grower, well protected. His plan is to spread litter or straw over the roots (the plants being all on Manetti), and then to earth them up as one would earth up Potatoes. This must necessarily save the roots from frost, and also from what he and I both find to be a great enemy—wind. Yet with all this everything had been cut down to the snow line; and although his positive losses—the dead of his army, were few in proportion to his stock, yet I am sorry to say his "nominal list of wounded" went up to a very high figure. His fine yellows were dreadfully cut up, and in some instances right back to the very "bole" where there were some few signs of life, while a large quantity of wood had to be cut out from many of his finest plants. I do not think that much reliance is to be placed on lists such as those furnished by a correspondent in a contemporary as to the kinds of Roses that are hardy. What he has found might be very right for his own district, or his own garden rather; but I should advise every one to go by his own experience, see what is the character of his soil and the condition of his plants, and then, as he finds they have withstood or survived the winter, so let him be guided for the future. I say condition of his plants; for if one had been removed in the autumn and another not, the probability is that the former would have been comparatively uninjured, the latter much cut up. Much has been said about Roses on their own roots, and the manner in which they have withstood the frost: it may be so, but I have not found them do it better than those budded low on the Manetti.

On the whole, then, looking at the present state of things, I somewhat tremble for our Rose prospects. I cannot feel that we have a probability of seeing such grand shows as we have had, and that many a rosery has been spoiled of its beauty. This is one of the "chances of war," and rarely does a season pass over that is not trying to some class of plants. The past winter has been trying to a good many, but the lover of flowers is not daunted; he sets to work again with fresh vigour, and hopes from the experience of the past to gain lessons for the future.—D., *Deal*.

THE EFFECTS OF THE SEVERE WINTER AT MESSRS. IVERY AND SON'S,

DORKING.

It was not till within the last three or four weeks that the effects of the late severe winter, succeeded by the cold weather of March, were made fully evident. It is now certain that the injury sustained by exotic plants generally considered hardy, is much greater than was at first anticipated, and that the losses by death exceed those in any previous season within recollection, not excepting the memorable winter of 1860-61. Providentially the intensity of the cold was unequally distributed, arising chiefly from the local circumstances of situation and soil in connection with surrounding influences. Had this not been the case—if the temperature had been uniformly so low as registered in several places, many of our most valued ornamental trees and shrubs would have been exterminated.

From the evidence already given in these pages it has been seen that the readings of the thermometer varied very considerably in different places. The variations were similarly remarkable in this neighbourhood; in my garden (Blechingley, Surrey), one of Negretti & Zambra's instruments placed against the east side of the dwelling-house, but not near any chimney or anything likely to influence it from within, on the night of January 4th-5th registered 19° of frost. In another garden, about half a mile distant, in the vicinity of water, and lying somewhat low, 25° of frost were indicated; in a third, two miles distant, with a heavier and more clayey soil, 31°; while in the valley of the Mole, at Dorking, ten miles distant, and in its immediate neighbourhood, the temperature sank so low as to range from 6° to 12° below zero—that is to say, from 38° to 44° of frost.

The effects, therefore, of the cold upon plants exposed to it in each of the places referred to, as regards death and injury, have been in proportion to its intensity or nearly so, and hence at Dorking most severe. It is with feelings of sincere regret that I have to report one of the most disastrous visitations probably known. As above stated, the temperature in the valley of the Mole sank so low as from 6° to 12° below zero on

the night of January 4th-5th, and the cold of the succeeding fortnight was doubtless similarly proportioned to that experienced at other places. In this valley is situated the well-known nursery of Messrs. Ivery & Son, and upon this devoted spot and the neighbouring gardens has the severity of the weather told to a fearful degree, causing death and injury to trees and plants to an unprecedented extent.

Wherever there is a first-class nursery established, the horticulture of the neighbourhood is sure to be beneficially influenced, the standard of gardening is raised, and the taste for beautiful plants spread and improved. This is very applicable to these nurseries, and your respected correspondent "D., *Deal*," in his article upon Denbies at page 143, has very aptly remarked that "Dorking is a classic name to the English horticulturist;" for, although, the high repute of the firm in the horticultural world is in a great measure due to the untiring energy and perseverance with which the successful cultivation, and the raising and collecting of new varieties of hardy British Ferns and of Azalea Indica, are pursued, other departments have also received especial care, particularly the growth of ornamental trees and shrubs; and the pleasing appearance of the numerous gardens around Dorking and Reigate, where the fine scenery afforded by the Surrey Hills, and the undulation of the district, have attracted so many different residents, is in no slight degree owing to the fine specimens with which they have been enriched from Messrs. Ivery's nurseries. Specimen plants of all the principal Conifers and evergreens are kept in considerable numbers in the home nursery for the selection of purchasers, and it is upon these that the severity of the late winter has fallen with unsparing rigour.

Having for many years made frequent visits to the nursery, the feeling of depression which attended an inspection of it a few days ago may be easily imagined. Some idea may be formed of the destruction, when I state that plants of Araucaria imbricata from 6 to 12 feet high are killed, not here and there a single specimen, but by the score—indeed in an avenue of finely grown trees, scarcely one is left that will be of service—Deodars from 10 to 15 feet high have been killed to the snow line, and in some cases are quite dead. A Cedar of Lebanon 15 feet high is dead or nearly so; Cedrus deodara robusta, a fine specimen, 10 feet high, is also dead; Abies Morinda 8 or 9 feet high, and Pinus excelsa of the same height are also dead; and, which is much to be regretted, a fine old plant of Berberis Darwinii which when in bloom has always been a conspicuous object, is killed to the snow line. In fact, except those to be presently noticed scarcely a quarter assigned to any particular kind has escaped uninjured more or less, and in some instances the whole stock is entirely destroyed. The utility of snow as a protection was here very distinctly and even remarkably proved. The snow was about 16 inches in depth, and in those quarters occupied by young plants which were entirely covered by it, the greater part have escaped, and, wherever the tops of plants were exposed above the snow, that portion was killed. In the case of large plants the bottoms that were under the snow are still alive and breaking into foliage, although all above is destroyed. Throughout the grounds the place of the snow line can be clearly traced. So assured was Mr. Ivery of the protection the snow was affording, that he had a stock of evergreen Magnolias, M. grandiflora, M. exoniensis, &c., only slightly protected, banked up with snow both above and around, and every plant was saved.

I subjoin a list from my notes taken on the spot which I have arranged under the different headings of killed, injured more or less, and uninjured.

1. Killed.

Cedrus deodara.—Nearly every plant killed, or so severely injured as to be worthless.

Cedrus libani.—The same as the preceding.

Cedrus deodara robusta.—Large plants killed; smaller ones killed to the snow line.

Cupressus Lambertiana.—The whole stock.

Arthrotaxis Doniana.—A plant 3 feet high, slightly sheltered.

Cupressus sempervirens.—The same; a few escaped, but were very severely injured.

Araucaria imbricata.—As above stated, probably four-fifths of the whole number; the rest rendered useless.

Abies Morinda.—Some large specimens, while others were apparently uninjured. A singular instance of the capricious effects of the cold.

Pinus excelsa.—Nearly all the larger specimens; others much injured.

Pinus insignis.—The whole stock.

Portugal Laurels.—The same, or nearly.

Common Laurels.—The same, or nearly.

Arbutus unedo.—All the larger plants.

Rhododendron ponticum.—A whole bed.

Quercus ilex (Evergreen Oak).—The whole stock.

Laurustinus.—The same.

Roses.—Seventy-five per cent of the whole.

2. Injured.

Besides the above, this list includes many kinds where the death of individual plants or of more than one was not observable.

Abies Douglasii.—More or less.

Juniperus recurva.—Large specimens, 5 and 6 feet high.

Libocedrus chilensis.—Killed above the snow line.

Cupressus elegans.—The same.

Taxus (Yew), of varieties.—Slightly.

Arbutus.—All much injured, especially A. Milleri, A. photinifolia, A. magnifica, and others.

Aucubas.—The common variety, slightly.

Escallonia macrantha.—Killed to the snow line.

Ivies.—Upwards of thirty varieties very much injured, many of them killed to the snow line.

Hollies.—Most of the variegated, and many of the green kinds, some very severely.

Hybrid Rhododendrons.—Very severely.

Cytisus (Broom), the double-flowering Furze, and even Box and Pampas Grass, the last slightly protected.

Euonymus japonicus.—Severely.

Jasmines.—Some kinds.

The foregoing lists do not include every kind of plant or tree injured or killed. I have noted the most conspicuous instances among well-known species. For the same reason, in adding a list of kinds that have escaped uninjured, which is equally interesting, since we may know from it those capable of enduring the severest ordeal our climate can inflict, the high estimation in which many of them are justly held will certainly be enhanced.

3. Uninjured.

Abies Albertii, A. orientalis, A. Menziesii, A. Clanbrasiliana, and its varieties.

Cryptomeria japonica, C. japonica araucarioides, and C. japonica nana.

Cupressus Lawsoniana.

Sciadopitys (Umbrella Pine).—Very slightly sheltered.

Juniperus.—Of upwards of thirty kinds of Juniper, the only ones injured are some large plants of J. recurva previously referred to. All the others that came under my notice were in perfect health. This beautiful class of ornamental plants will, doubtless, gain increased favour, not simply from their hardy character, but also from their peculiar but pleasing habit, and colour of foliage.

Pinus.—Besides those naturally found in countries with severe climate, the following have escaped uninjured:—

P. Bentbamiana, P. laricio, P. Lambertiana, P. Beardsleyi, and P. Pallasiana.

Picea (Abies).—P. Nordmanniana, P. pinsapo, P. amabilis, P. nobilis, and P. cephalonica.

Retinospora obtusa, and R. pisifera. These recent introductions will, therefore, prove valuable acquisitions.

Thujas.—T. aurea, T. compacta, T. Lobbii (gigantea), and T. gigantea (Libocedrus decurrens), besides the well-known Chinese Arbor-Vitæ (Biota), and its varieties.

Thujopsis borealis, T. dolabrata, and T. Standishii.

Wellingtonia gigantea.

It is impossible to avoid expressing satisfaction that there are some of the most beautiful forms of the Coniferæ which we possess found also to be the most hardy. A winter garden out of doors may yet be a reality in England.

The deciduous shrubs and trees appear to have suffered least. Mr. Ivery hopes that the generality of them have escaped without material injury. The Purple Magnolias are showing bloom freely.

A word or two on the Roses. An inspection of the quarters showed plainly that not less than three out of every four are dead. The effects, too, have been strangely capricious, as it has always happened with Roses. As a rule, the whole of the Noisettes and Teas exposed are killed, as well as most of the Bourbons, and those that have generally been considered tender. Among the Remontant Hybrids (H.P.s), some kinds have passed through the ordeal entirely unscathed, while of others the whole stock is killed. Some, again, have been severely injured, while there are instances where one plant is safe and sound, and its next neighbour of the same variety is quite dead.

The following first-class Roses have escaped—Charles Lefebvre, Senateur Vaisse, Jules Margottin, Prince Camille de Rohan, Baron Gonella, and Général Jacqueminot. Of these favourites, I did not observe a plant affected. On the other

hand, the entire stock of Empéreur de Maroc, Anna de Diesbach, Mdlle. Bonnaire, Souvenir de la Malmaison, Celine Forestier, Auguste Mie, and Duchesse d'Orleans, are killed. John Hopper, Chabrillant, Count Cavour, and Beauty of Waltham, all first-rate, are severely injured, and even Gloire de Dijon has suffered much. Fearful as the havoc has been among them, I was glad to find that Mr. Ivery has a fine collection of plants in pots, chiefly on their own roots, in first-rate condition, and now pushing forward in one of the pits, but, of course, totally inadequate in number to supply the place of the hundreds cut off out of doors.

Grateful was the relief afforded by the display of floral beauty in the different glass structures, after looking upon the sad spectacle of destruction out of doors. The Azaleas, the stock very extensive both in number and variety, now beginning to show their gay and charming colours, are, as they ever have been, in the highest state of perfection. Among those in bloom were—Belle Gantoise, rose and white; Criterion, salmon pink, magnificent; Flower of the Day, a light variety, very pretty; Excelsior, rose; Forget-me-not, brilliant reddish purple, very fine; Leviathan; Queen of the Whites; Stella, very good; Tricolor, a spotted variety; but unrivalled in beauty and delicacy of tint is a new kind, which obtained high honours last year, and is very properly named Fascination. Many plants of this gem are now in bloom, and offer a sight so beautiful, that it lingers in memory as strongly as it fascinates the eye in beholding. The encomiums already bestowed upon this noble flower cannot be improved by any addition of mine; it is lovely, and will maintain a chief position among the varieties of Azalea indica for a long time.

Nor must I pass by unnoticed a very fine strain of herbaceous Calceolarias, not only excellent in colour and form, but almost inclining to the character of the shrubby kinds, dwarf and compact in habit.

To do justice to the collection of British Ferns would fill a month's issue of The Journal of Horticulture; they are now beginning to unfold their lovely fronds, endless in variety and form. So rapid is the advance constantly being made, that at present upwards of four hundred varieties have been named and classified. Nor is there, probably, any assignable limit to which their variation may ultimately reach. Later in the season will be more appropriate for a notice of this interesting class of plants.—Adolphus H. Kent.

CULTIVATION OF PEAS.

I have read with much interest the article by "C. P.," at page 258, on the cultivation of every one's favourite—the Pea. The mode of culture there described is somewhat similar to that which I have practised for many years, both where the ground is very shallow and dry, and where it is of a stiff clayey nature, neither of which conditions is favourable to the production of good crops of Peas.

Where the ground is shallow and dry I take out a trench as for Celery, and about 15 inches wide and 18 inches deep, removing a portion of the subsoil, if necessary, in order to attain the requisite depth, carry away the subsoil thrown out, if any, in a barrow, return with this full of rotten farmyard manure, and add to every two parts of the latter one of good loam or fresh soil. If such cannot be obtained, soil from a road side, which has been kept in a heap for from four to six months, will answer. Put into the trench a foot deep of this compost, and over it an inch of soil. Then stretch a line down the centre and drop three rows of Peas, which will yield quite as well as five, and very differently from those we very often see grown on the narrow-drill system. Cover the Peas with 2 inches of soil, and leave the rest of this at the sides of the trench; it will keep off the cold winds if the crop is an early one.

As soon as the Peas are sticked fork back the ground between the rows, leaving it highest in the middle, and put some soil against the plants as the work proceeds. They are thus placed in a trench, and can, therefore, be conveniently and effectually watered, whilst they will receive the full benefit of all the rain that may fall. For watering, a hose may be attached to a tap, so that the water will run along the trench; or, if there is a stream in the garden on a higher level, it may be conducted by a channel to the Peas, as I have often done. I do not mind disfiguring my garden with a little stream running beside or across, a walk, if by such means I can obtain a good dish of Peas and this cannot be produced without plenty of water. If the cultivator has neither of the conveniences which I have mentioned, but has a pump on a higher level than the garden, he can put down draining pipes a few inches deep, or cut an open channel for the water.

I grow my Scarlet Runners just in the same way as Peas. If dung is scarce, all the refuse from the garden, such as that of Broccoli, Cabbages, or Turnips, and weeds, may be put into the trenches.

I like to have my rows of Peas 5 feet apart, and if I have not much room, I plant a row of some dwarf quick-growing crop in the intervals, so as to have it off the ground before the Peas come in. I endeavour, if possible, to have Scarlet Runners in a single row, for thus I find they produce one-half more. I also like to have water running in the row two hours a-day. This system answers better than sowing in drills, and, after sticking, banking up like Potatoes, the effect of which is to throw off the water. If one has plenty of hot dung, and wants a crop early, by making the trench deeper and wider, and then filling it with dung, the plants will have a hotbed to grow in; also the crop will be earlier still if roots of the previous year are planted.

As regards wet, stiff, clayey soil, I likewise form trenches the same as for shallow ground, but 6 inches deeper, and put in this depth of rough rubbish at the bottom as drainage. The trench is then filled up to the general ground level with a lighter compost than that used in the previous case. I do not use any of the clay soil, but procure light instead; I like that in which Kidney Beans, Strawberries, &c., have been growing in the houses.

"C. P." and her James have good soil, therefore in their case all this trouble is unnecessary. I do not perceive the use of having the Peas high; from 4 to 5 feet will be quite enough. —John Taylor.

THE FORS AND AGAINSTS AN ORCHARD HOUSE.

"*Audi alteram partem*" will ever continue a sound maxim; everything, including an orchard-house, has its pros and cons, and in forming a correct judgment upon the merits of any question all depends upon striking a correct balance between what we call in algebra the pluses and minuses. I well remember that chapter in De Foe's "History of Robinson Crusoe," in which he represents his hero, when cast upon the desert island, as summing up in so many alternate paragraphs—1st, The desponding thoughts which agitated his mind; and 2ndly, Those more favourable features in his case, which served in some measure to counterbalance them. With your good leave, I propose to adopt the same impartial method on the subject of orchard-house culture; and as the poet, comparing life to a chess-board, describes the former as—

> "A chequer'd scene, on which the trembling light
> Falls in alternate gleams of *black* and *white*,"

I shall beg to introduce to your readers my friend Mr. Potts, who has lately built an orchard-house, as placing each dark reflection that arises in his mind in juxtaposition with its corresponding white.

Black.—I have built a large orchard-house; it has been a considerable expense, the extras, including a tank, pump, and shelf for Strawberry plants, have exceeded by almost one-third the original estimate. My wife taxes me with extravagance, and thinks that the money would have been better expended in adding to my stock of household furniture, or providing an adequate supply of table linen.

White.—Never mind its liberal dimensions; size, if a fault, is one on the right side; it argues in me surely a Sir-Joseph-Paxton largeness of mind. Besides, it has been all paid for, and so is fairly my own, which is more than can be said of every coat on every man's back. Extras are an inseparable accompaniment of every grand design. I do not much mind what my wife says, she really thinks that "e'en my failings lean to virtue's side," and I have as much reason for charging her with a lavish expenditure when she rides her hobbies, as she me, when riding mine.

Black.—I cannot say that my house quite answers my expectations. I perceive that several spurs have only blossom-buds at their extremities (barren spray, Mr. Bréhaut calls these); a pretty kettle of fish after all my painstaking! Other lanky shoots have indeed a leaf-bud at the end, but all the other buds, both leaf and blossom, have clean dropped out; effects of unskilful pruning, of course.

White.—My house makes a capital lounge, I enjoy my weed

in it immensely. How jolly it is to bask in the sunshine when the east wind whistles outside! I am rather glad I built it, after all. When that barren spray is clean cut out plenty of spurs will remain, and several of them, I am glad to see, are furnished with double shoots. Hurrah! one for wood, the other for fruit! Alternate pruning!

BLACK.—My trees were covered with blossoms, but not a quarter have set; they strew the ground, and make me think of a place said to be paved with good intentions. I believe those little busy bees have knocked half of them off. I wish they would improve each shining hour instead of injuring my property. I saw a great bumble fellow on a very promising blossom, making it quite top-heavy.

WHITE.—I suspect that if all the blossoms had set they would have been more than my trees could bear. A dozen Peaches on each tree would not be a bad crop at a period when my trees can hardly be said to have arrived at years of discretion, and more than a dozen blossoms have set. In any case, I need not take the trouble to thin them—an operation recommended in the books, but requiring great strength of mind. By-the-by, I remember to have heard that bees are invaluable, and they seem to have been sent for the special purpose of scattering the pollen, which it would be tedious to effect with a camel-hair brush. How wonderful is the economy of Nature!

BLACK.—Alas! some boys have been throwing stones over the wall, and have smashed several panes of glass. What wretches boys are! I should like to give them all a sound cuffing. At this rate a fine glazier's bill I shall have to pay!

WHITE.—Boys will be boys. I was a boy once myself, and a bit of a pickle. I am fond of pickles, and appreciate exuberant spirits. There is something very charming in that freedom from care, that recklessness of consequences, and that mischievous disposition which characterises boys. It was very natural now of those urchins, who have accidentally broken my glass, to have been testing their projective powers, and it is a comfort to reflect that the apertures they have made in my roof will materially increase the ventilation of my house—no mean factor, I am told, in the product of orchard-house success.

BLACK.—The leaves that have made their appearance look queer. What makes them seem as if they had been twisted in curl-papers? Why! I declare they are covered with aphides; whence did they all spring from, I wonder? It is of no use killing one when a thousand come to his funeral. No wonder flies were considered one of the plagues of Egypt. I will make instant arrangements for giving my house a thorough fumigation.

WHITE.—Others are quite as much bothered with insects as I am. Is there not comfort in the thought? I cannot help feeling glad that so many innocent creatures have been indebted to me for the jolly time they have had of it. Why, my house must have been to them a perfect Elysium. My man, who, bellows in hand, is busy in the work of fumigation, must have the lungs of a rhinoceros to stand that smoke; he seems to like it, for he has a pipe in his mouth as well. The smoke almost stifled me, and the one whiff I had of it sufficed to convince me of its necessarily fatal effects upon entomological existence.

BLACK.—Why, I declare some enemies have been and bitten in half several of the young fruit. My patience is sorely tried, and will soon be exhausted. I suspect the thieves are some of those saucy sparrows that I see flying out when I come in. I should like to put some salt on their tails, and teach them, as Cowper so poetically has it, "never to come there no more."

WHITE.—If those little birds have diminished from my prospects of a crop, at all events they have filled their own crops. I never would be a member of a sparrow club, for sparrows do more good in a garden than harm, and merry England would soon become like France if we were to wage an exterminating warfare with our little birds.

BLACK.—The bill has come in for the tobacco paper. Let me see, 6*s*. for one lot (not the right sort), 4*s*. for shag (too damp), 9*s*. for more tobacco paper, which had, as my man quaintly observed, a pretty strong *scent* to it—19*s*. altogether. Surely my better half will renew her charge of extravagance.

WHITE.—I have earned a little experience, which, though dearly bought, is invaluable. It is not good to be penny wise and pound foolish. I have derived intense satisfaction from witnessing the fatal effects of fumigation on insect life. It is true that tobacco paper has cost me some shillings, but money is a circulating medium, and, no doubt, this outlay has contributed towards the remuneration of a very respectable class of manufacturers, whose profits (and I wish the same could be said of certain proprietors of tall chimneys), mainly depend upon the consumption of smoke.

BLACK.—I know not how it is, but whenever I go into that orchard-house I am bitten, some mysterious insect ingeniously contrives to find its way inside my trowsers, and bites me on my legs. It must be a very poisonous kind, for the inflammation it causes is painful and lasting; scratching makes it worse. I hardly bargained for this, Mr. Rivers, when in deference to your judgment I invested in an orchard-house.

WHITE.—The insect, no doubt, derives satisfaction from biting me; it evidently thinks me a nice man. Live and let live is a humane and generous sentiment. A little sweet oil has a most soothing effect, and relief from pain is nearly akin to pleasure. I daresay Mr. Rivers himself gets bitten, and I almost hope that he does, only as an advocate for orchard-houses he is wise to say nothing about it; it is for him to stick to the pros, and leave it to others to speak of the cons.

On the whole I consider—1st, That my contribution to your Journal will be considered too lengthy for publication; and 2ndly, That White has the best of it. I will only add my recommendation that the orchard-house cultivator should have a few Vines to train up his rafters, in case his trees in pots should turn out a failure.—A CONSTANT READER.

GARDENERS' EXAMINATIONS FOR HONOURS.

THE Royal Horticultural Society's examinations of gardeners for the present year are fixed to take place on the 3rd and 4th of July, and on the 30th and 31st of December.

The following are the conditions under which candidates will be required to compete, and the advantages which may be secured in the event of success.

"1. Diplomas will be granted to those who, having been certificated by the Society of Arts, or other public body of Examiners recognised by the Council, in Mensuration, in Book-keeping, in Practical Geometry, in Botanical knowledge, in Floriculture, and in Fruit and Vegetable Culture, shall also receive Certificates from the Royal Horticultural Society for practical skill in the cultivation of fruit and vegetables, and in the culture of flowers, and shall show a fair amount of skill in Surveying and Plan-drawing, and taste in Laying-out gardens. Such diplomas will confer the title of Associates of the Society.

"2. First and Second-class Certificates for the following branches of practical Gardening will be granted by the Royal Horticultural Society to candidates who shall pass the Society's examinations in those branches:—(*a*) In the operations of the Fruit and Vegetable Garden; (*b*) In the operations of the Flower Garden.

"3. A Medal will be presented annually to the candidate who, having taken the Certificates of the Society of Arts in Botany, and in the cultivation of Fruit and Vegetables and in Floriculture, shall gain the highest number of marks in Practical Gardening at the examinations of the Royal Horticultural Society.

"Candidates will be eligible for examination in Practical Gardening, if they have previously obtained Certificates from the Society of Arts in Botany and in Floriculture, or in Botany and Fruit and Vegetable Culture. A candidate who can present a written recommendation from any Fellow of the Royal Horticultural Society, from the President of any Floral or Horticultural Association acknowledged by the Society, or from the Director of any public park or garden, may also be examined in Practical Gardening."

The subjects of examination are very nearly the same as those laid down for the Society of Arts' examinations, given at page 66 of the present volume, and are as follow:—

FLORICULTURE.—The leading flowers of the different seasons, indicating those to be obtained naturally, and those by artificial means. Leaf-buds and flower-buds, the conditions favourable to their development respectively. Food of plants, how and whence derived, and in what form received. Manuring substances best adapted for flower culture. Improvement of races in plants, how has it been effected, and by what means can it be carried forward? Hybridisation, objects and guiding principles of. Conditions necessary to ensure fertility in flowers. Construction of houses for Plant Culture. Warming and Ventilation. Influence of ventilation on plants confined in forcing-houses. Limits of temperature endurable by plants, and how to turn this to advantage in practical Floriculture. Bottom heat, value of in plant culture. Watering, the *rationale* of—what to avoid. Liquid Manures. Propagation, the various modes of, and their special adaptations. Germination of seeds, conditions favourable and unfavourable to. Vitality of seeds, duration of, and how best preserved. Treatment of seedling plants. Budding, grafting, and inarching, how performed, and to what subjects best adapted. Increase by cuttings and by layers. Leaf-cuttings, how is it that they can organise buds? Potting. Composts. Acclimatisation: Is it possible to increase the hardiness of any race of plants, and by what means?

Text books: Lindley's "Theory and Practice of Horticulture,"

McIntosh's "Book of the Garden," Thompson's "Gardener's Assistant."

Fruit and Vegetable Culture.—*Fruits:* Kinds of Fruits adapted for various soils and exposures. The propagation, pruning, and training of fruit trees. The forcing of Fruit trees, and their cultivation under glass, both in and out of pots. The theory of ripening, and the principles that ought to regulate the preservation of Fruits after they are ripe, or their subsequent maturation. The packing of Fruit for transmission to great distances. *Vegetables:* The kinds and quantities of Vegetable seeds and roots required for cropping gardens of given dimensions. The culture of the different kinds of Vegetables and Salads. The preparation of fermenting materials for artificial heating. The forcing of Vegetables and Salads. *General Subjects:* Soils, water, atmospheric air, light and heat in their relation to the successful cultivation of Fruit and Vegetables. Manures and their application. The diseases and insects to which Fruit trees and Vegetables are subject, and their remedies. The structure and functions of the organs of plants considered in their relation to growth and reproduction. The erection, heating, and ventilation of garden structures.

Text books: Loudon's "Suburban Horticulturist," "The Cottage Gardener's Dictionary," Hogg's "Fruit Manual."

ROYAL HORTICULTURAL SOCIETY.

Weekly Show, *May 11th.*—On this occasion prizes were offered for six Pelargoniums, twelve Roses in pots, twelve plants (miscellaneous), and for collections of vegetables. Messrs. Lucking Brothers, nurserymen, Bayswater, were awarded a second prize for Pelargoniums. A first prize was obtained by Mr. W. Lynn, gardener to Lord Boston, Hedsor Park, Maidenhead, for a collection of vegetables, and an extra prize was awarded to Mr. H. W. Cordle, gardener to Earl Fitzwilliam, Coollattin Park, Gorey, Ireland, for three sorts of Potatoes. Extra prizes were also given to Mr. James Tegg, gardener to the Duke of Newcastle, Clumber, Worksop, for two dishes of Peaches, and to Mr. C. Osman, gardener to R. Holland, Esq., Stanmore Hall, Middlesex, for two boxes of cut Roses, also for a dish of Strawberries. Mr. W. Bartlett, Shaftesbury Road, Hammersmith, obtained three extra prizes for a collection of Ferns, a basket of cut flowers, and a collection of Spiræa japonica. A very interesting collection of plants, made up of Roses in pots, Azaleas, Gloxinias, Mignonette, &c., from the Society's gardens at Chiswick, formed a very pretty show.

NOTES AND GLEANINGS.

The ceremony of laying the first stone of the Hall of Arts and Sciences by Her Majesty having been fixed to take place on Monday next, May 20th, the Royal Horticultural Society has determined, upon the suggestion of His Royal Highness the Prince of Wales, to hold a Special Floral Fête on that day. The exhibitors of Tricolor Pelargoniums and other plants have been invited to contribute their specimens, and we are informed that special medals and prizes will be awarded, but that this Fête will not cause any alteration in the arrangements already published for the Exhibition of Tricolor Pelargoniums on the day following. The contributions to both, we are assured, will be most liberal and of the greatest horticultural interest. After the ceremony of laying the foundation stone, H.R.H. the Prince of Wales, and the Provisional Committee of the Hall of Arts and Sciences, will conduct the Queen through the south-east exit from the tent to the east door of the conservatory of the Royal Horticultural Society, where her Majesty will be received by the Council of the Society, and be conducted by the north-western terrace of the gardens to her carriage at the Prince's Entrance, Albert-road.

—— At the meeting of the Royal Horticultural Society held April 2nd, Mr. Bateman offered a plant of Dendrobium Wardianum as a prize for the best list of Orchids arranged according to the climate which they require. Five competitors, we are informed, have come forward, and the name of the successful one is to be announced at the general meeting on the 21st instant.

—— We are much gratified to observe that the eminent services which the Rev. Miles J. Berkeley has rendered to Horticulture and Agriculture by his profound researches and writings on Cryptogamic Botany, have been recognised by a grant of £100 per annum on the Civil List.

—— We regret to announce the death, on the 3rd inst., of Mr. John Dobson, sen., of the Woodlands Nursery, Isleworth, and who, before entering into business for himself, was for several years gardener to the late E. Beck, Esq. Both then and subsequently he was a frequent and most successful exhibitor of florists' flowers, and particularly of Pelargoniums and Cinerarias, as well as a raiser of some fine varieties. He had long suffered from, we believe, heart disease.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Manure and dig the ground as it becomes vacant for the winter crops of Brussels Sprouts, Broccoli, Greens, &c.; thin all advancing crops early. *Artichokes* (*Globe*), plant, using the strongest suckers; also *Basil* in rich warm soil, and *Capsicums* on warm borders. A good sprinkling of the Cape *Broccoli* may now be sown, likewise Grange's Impregnated Cauliflower, and Walcheren Broccoli; these will succeed the Cauliflowers sown in February. *Gherkins*, sow a row if not done. Those raised in heat in boxes should be hardened-off forthwith, preparatory to planting out. If a slight amount of fermenting material could be provided for them, after the manner of those on the ridge, by means of cut grass or other refuse fermenting matter, it would tend to insure a crop, and such is not so easily obtained in the northern parts of the kingdom as about the metropolis. *Celery*, plant-out the early plants in the trenches; also *Tomatoes* against walls and warm fences. With regard to *Peas*, *Beans*, *Spinach*, *Radishes*, *Cresses*, *Lettuces*, Horn *Carrots*, &c., we may repeat the advice offered in one of our earliest Calendars—viz., to sow a little more, if possible, when the preceding sowing is fairly above ground. Destroy snails and slugs by all available devices.

FRUIT GARDEN.

The spring disbudding of fruit trees is a matter of considerable importance at this period, for on thinning in due time and in a proper way, success in ripening both of wood and fruit is mainly dependant. The trees should be looked over when the young shoots are about 2 inches long, then in about a week afterwards, and finally in about another fortnight. The first dressing should consist chiefly in rubbing off foreright and ill-placed shoots; at the second thinning a selection of wood as to the necessary quantity and position may be made; and at the last all gross shoots or robbers should be stopped, in order to equalise the sap. Hand-pick the Currant and Gooseberry bushes if caterpillars appear, or dust with white hellebore powder. Thin-out weak shoots from Figs, and stop the others when 6 inches long. Thin the fruit of Peaches and Nectarines, and syringe often. Thin-out the shoots of Pears and Plums, and reduce the crop to the strength of the tree. Hoe and mulch Strawberries, and keep the runners cut off, except when wanted for forcing. Regulate Vines, and stop the laterals one leaf above the best bunch, removing any others. Look over the grafts, and relieve those which are growing by loosening the ties. Hoe among all bushes to keep down weeds, and loosen the soil.

FLOWER GARDEN.

It is now high time to think of bedding-out some of the mass flowers, at least such as are least liable to injury by frost, and have undergone a proper hardening process. Much may be done as to display by a judicious arrangement or combination of both colour and figure. As a general principle, our best authorities seem to agree that the various shades of orange and yellow will class well with the various purples and blues. Whites are suitable with the blues, oranges, and reds. White, however, deranges the effect of the yellows, as also the violet shades; whilst the various red or rose-coloured flowers are, as far as colour is concerned, capable of forming a bed by themselves. Auriculas must not be forgotten because the amateur has now many demands on his time; shade them in very hot sunny weather, though they cannot at this season be easily too much exposed, provided the regular attendance is given to watering, &c. Polyanthuses cannot bear the mid-day sun, except on very cool subsoils. A shady situation under a hedge with a north aspect will be suitable for them during the next three months—that is to say, if grown in pots. As regards Tulips, do not forget to fertilise some of the best breeders in order to obtain some good seed. It would be time and trouble thrown away to cross yellow grounds with white ones, or the contrary. In choosing sorts to produce seed, let them be thick in the petals, round at the top, pure in the cup, and clean in the stamens. Apply the farina with a small camel-hair brush to the stigma of the variety intended to be operated upon, and cover the flower with a hand-glass. Should the present dry weather continue, Carnations and Picotees will want occasional waterings, which, when afforded, should be plentiful. When a large stock of dwarf plants of Chrysanthemums is required for flower-garden purposes in the autumn, the old stools or plants must be planted in rich soil at about 4 feet apart, so as to leave room for their being layered in August. Old plants planted now at the foot of a wall in very rich soil will cover a wall

6 or 8 feet high by the autumn, and if properly trained will flower splendidly. We do not know anything more interesting in the dull months of November and December than a well-covered wall of these fine plants.

GREENHOUSE AND CONSERVATORY.

Camellias making their wood should have constant shading, the house should be kept very moist day and night, and the plants frequently syringed. Pay every attention at this period to plants of climbing habit, whether festooning the roof, trained up pillars, or on trellises in pots. Let stopping, thinning, and training proceed in a methodical way. Many conservatory plants are unproductive of blossom from the gross shoots not being stopped. To stop such frequently is to gain both time and space. Those who grow that delightfully sweet winter flower, the Cyclamen persicum, will find it the best plan to plant it out at this period in a highly-raised bed in the kitchen garden. This bed should be composed chiefly of peat soil and coarse sand, to which a little sandy loam and leaf soil may be added. It is truly astonishing what superior plants they make in this way. Be in no hurry to turn out of doors fine greenhouse plants, but all coarse and common subjects, and many softwooded plants, whose tops may be considered, in a manner, annual, may be turned out any time about the end of spring, and the finer portion of the plants will by this means have all the room, air, and light to themselves. Of all plants those in the greenhouse are most apt to become too dry in the summer, and, therefore, besides the regular watering, they may be well syringed every afternoon, in such fine weather as we have at present.

STOVE.

Centradenias, Eranthemums, Poinsettias, Justicias, Geissomerias, Clerodendrons, Euphorbias, Brugmansias, Gesneras, Vincas, and other ornamental stove plants, more especially those intended to flower in the dark winter months, should at this period have the highest cultivation. They should be allowed plenty of room, and clear manure water, and should, if requisite, have their rambling shoots stopped occasionally. The latter should be done forthwith, as young wood made late in the season will not produce winter flowers. Many stove plants would do better from this time until the end of August in an intermediate-house where they would have less confinement than in a regular stove. For want of such a house gardeners often make use of vineries for this purpose, and distribute their stove plants in summer throughout the different forcing-houses, and if only for the benefit of finishing and ripening their growth, without being crowded, this is a good plan.

PITS AND FRAMES.

Propagation must be continued until a full stock is obtained. Tender annual seeds for late flowering may still be sown. Very many plants that are difficult to strike from cuttings may be increased by grafting on the roots of some allied species. All tender seedlings should be potted as soon as they can be handled.—W. KEANE.

DOINGS OF THE LAST WEEK.

TOOK the opportunity of the bright dry weather before the thunderstorm of Friday to hoe all ground to which access could be obtained, in order to break up the surface, whether showing weeds or not. This was especially necessary where that troublesome weed, the large white Convolvulus, was throwing up its shoots like miniature Asparagus. Weeding is almost an impossibility in most kitchen gardens, and the most economical mode of keeping them clean is the use of the Dutch hoe frequently, and leaving the sun to wither up the weeds. Except for levelling ground and making a fine surface for small seeds, the rake is useless in the kitchen garden. We are still using Sea-kale; but it is now rather long, and cannot be kept short, still it helps to give variety, as our Broccoli is becoming scarce, and we have not many Cauliflowers, though Peas from the orchard-house have been very useful, and the little Tom Thumb, though occupying little room, yields good gatherings.

Onions.—Those planted out are doing well, and the spring-sown are far enough advanced to permit of a good hoeing between the rows, not deep, but just sufficient to destroy the small weeds. A lot sown along with Cauliflowers and Celery under protection has been useful for salads when those sown last autumn were too large.

Celery.—Pricked out a lot over a slight hotbed to bring it on quickly, and pricked out more in the open ground. We need to select a hard piece of ground, put on it 4 inches of rotten dung, cover with an inch or two of fine soil, and then prick out; but now we generally stir the ground, mix some manure with it, add 2 or 3 inches more, some fine soil on the top, and prick out about 4 inches apart. We find the plants thus treated lift with better balls, and never seem to feel the removal. In our young days we recollect of a keen discussion about planting Celery, one party contending that it was best to take it up carefully and plant without touching a leaf; another party, that it was best to trim the plants and lessen or shorten the leaves. Both were right according to the point of view. If the roots were not kept pretty entire, and if the place were much exposed, diminishing the bulk of leaves would so far lessen the surface of perspiration, and therefore give the disabled roots less to do. When the roots can be taken up unmutilated, and the slightest shade given in very bright weather, then the rule ought to be, Touch not a leaf. In practice we dock or mutilate no leaves; but if the plants are large we generally examine the base and remove every appearance of a sucker that would compete with and so far rob the main stem. When this vegetable is wanted early, blanched for soups, it is a good plan to grow some thickly, say 6 inches apart, over a gentle hotbed, and earth up with ashes. Some are content with green Celery for soups, and therefore such care would be unnecessary; but others would look on green Celery in any combination as an abomination.

Asparagus.—How few are able to practise what they know to be the best. As soon as the bulk of the gatherings is over (and never could there have been better weather for this vegetable), we would like to apply a surfacing of rotten manure, a little salt, and even a slight dressing of artificial manure such as phosphates or guano; but we fear we must wait until we have some rotten short grass. Many forget that summer is the time to mnnure Asparagus. The winter dressing, so common because the dung can be more easily obtained then and put on the ground, is of little more use at that time than helping to keep the frost out of the ground. On a small old piece intended to be taken up for forcing next season, we have only cut a very few of the largest heads, and have allowed all to grow on strong and untouched. We know we shall be rewarded by the cuttings next Christmas, or much before that if desirable.

Dwarf Kidney Beans.—The first sowings are coming through the ground all the better owing to the floods of Friday night, and the day before we planted out a piece with strong sturdy plants, which will be protected at first with old sashes, mats, &c., which will keep on the succession and afford us a good supply some weeks before the first sowings out of doors.

Keeping off Depredators.—The worst of all contrivances for the purpose is, that they generally last only a time, until birds or other depredators become used to them; but a relief even for a time is desirable, and then the modes must be varied, and the different contrivances may last long enough to suit our purpose. For instance, now that the fruit-buds are all expanded, we shall not interfere with tomtits, but bid them a hearty welcome, as they will help to keep caterpillars and other insects under. We lately stated how Cauliflowers were stripped to the ribs and backbone, and how partridges cleared off the young Carrots as fast as they came through the ground. Finding a fine pheasant's nest at the base of an Apple tree, we were led to blame the hen as well as the partridges for attacking the Cauliflowers. We put in a number of sticks over the ground so as to stand 4 feet high, placed them slanting, and to each end suspended with a string about half a page of one of our broad-sheet morning papers, which make a rare rustling in the breeze, and since then not a Cauliflower, Carrot, Lettuce, or Cabbage has been touched by such winged visitors. The whiter the paper the better it is for this purpose, but possibly the dark lines of print may have some effect.

FRUIT GARDEN.

We hoed the ground well among *Strawberries*, and would like to dose them with a sprinkling of soot and lime, not only to help the vigour of the plants, but to drive slugs and worms away. The rains of Friday will do them much good and almost insure a crop if the ground be covered with litter to keep in the moisture. The most of the kinds are now showing blossom strongly. We intended taking up a lot which we had pricked out thickly last autumn for planting now under glass; but if the weather continue fine we will not do so, as we should not gain much more than eight days, and successions in pots in the orchard-house will almost carry us on until we have fruit out of doors. Last year we had a splendid supply in four lights over a slight hotbed, and if at all hard pressed we can place

some lights over the border, from which we intended lifting, and which fortunately faces the south. It is very easy to make a glass-covered bed under such circumstances. One of the quickest ways, perhaps, is to place flower-pots back and front for the sashes to rest on, with or without a rail from pot to pot, and then a wisp of litter from pot to pot, giving air in the usual way, and taking it away early in the afternoon. In dull weather this covering with glass will be of little advantage, but in bright weather it will bring in the crop from eight to ten days earlier. In such hot weather much time was occupied in watering Strawberry plants in pots, fruit trees in pots, Figs, Vines, and Peaches, using for the purpose clear manure water, or drainings from the dunghill alternately with clear water. We also used now and then clear lime water and clear soot water for syringing Strawberries not more than half grown, and Peaches, &c., overhead, having for many years given up syringing Vines, as we cannot obtain water clear enough for that purpose. Such washings, if the water is clear, help to keep Peach trees clean, and, in the case of the soot water, assist also in giving them greater luxuriance and a better green hue to the foliage.

Clear Lime and Soot Water.—Though we have often given the modes of making these, we repeat them, to meet the request of several correspondents. For clear lime water—say for a barrel of fifty-six gallons, add a spadeful of quick lime, stir it well, and leave it for twenty or thirty hours. Then remove the thin pellicle of carbonate of lime from the surface, and use it for syringing or otherwise, but let the operator keep it off his clothes as much as possible. If the barrel should be nearly emptied at once, fill again, stir the lime well, and use as before. When filled again add more lime.

To make soot water. For a similar barrel use fully a peck of fine soot, beat it up with a little water, with broom or spatula, into a thickish paste, as then it will mix thoroughly with the water, without any dry knots. Add the water, and then add about a pound of quicklime, or as much as would lie on a trowel, and stir all well. In twenty-four hours remove the scum on the surface, and you will have a liquor as clear as brandy. This would do for watering some plants, but for syringing it should have fully a half of clear water added. When the tub is nearly emptied, it may be filled, stirred, and allowed to settle as before; but this time it will be weaker, and the next time of filling fresh soot should be added, nearly as much as at first. After several such fillings, the barrel should be emptied out, and a fresh commencement made. It is astonishing in such cases, and in that of other manures, how soon a little quicklime clears the liquid.

Cement tanks are very useful for such purposes, built under the surface line of the ground, but an old wooden barrel would be more economical. For several years we had a number of old barrels that stood on a solid platform some 6 inches above the ground level, and these were fitted with rough wooden taps, but they became so decayed that we could do nothing with them, and we could not manage either to obtain new, or rather old, oil and other barrels that would have served our purpose, though unfitted for their original use. We therefore dug a trench in the clay, put down the old barrels so as to be about level with the surface, rough-mended the worst places, daubed them with tar outside, and packed them firmly with the clay all round, running tar down by the outsides of the barrel as we did so, and the old useless barrels thus treated have done good service for some half dozen of years, and, kept full, are likely to last a long time. Any old barrel useless for much else may thus become very useful to the cottager and the amateur, from merely sinking it in the ground. Our clay gave us an advantage, but any soil the most open and sandy would do if firmly rammed when a little damp; and a few pence were spent for tar from the gasworks, which was allowed to mix thoroughly with the soil for several inches outside the barrel. We have our eye on a huge butt that had been used as a horsecart water-barrel, but which is too far gone to be of use for that purpose. The press of other matters alone has prevented its being put out of sight below ground, when we have no doubt that what is useful for nothing but firewood would do good service for ten or twenty years. However, all who can obtain them should have good barrels and tanks, and what we have not yet had, but would have were we gardening solely on our own account, would be the means of heating a tank of clear or manure water as we liked, by either having a boiler on purpose or hot-water pipes along the bottom of the tanks.

ORNAMENTAL DEPARTMENT.

After the rains on Friday a considerable amount of mowing was done, though we were behind with other work, as the ground was too wet for doing much on it. Before that we were proceeding with fresh planting hardy edgings, as Cerastiums, &c. The Cerastium died off much last winter, but even if it had not done so, it is always best when fresh planted every spring. The soil at the outsides of beds is generally in the most unfavourable state as respects air, consistence, &c., so that in making up these edgings afresh we find it a good plan to take out a spit at the sides, place that near the middle to be incorporated with the bed, and refill at the sides with better-aired and pulverised soil from the surface of the bed. This is especially necessary when the same edging is to be repeated in the same place.

Much time has also been occupied in potting Pelargoniums, pricking off the last seedling Lobelias, and putting in the last batch of Verbena cuttings, planting them out at once in light soil over a hotbed. These will make good plants to lift with small balls in little more than a fortnight. We are a little late with some of these plants, though the bulk is early enough; but though not a single foot of glass has not had its several crops all the winter, something must be late when there is a constant contest going on as to which is to be preferred, the useful or the ornamental—that which, in a word, has to appear at table to be eaten, and that which is merely to please the eye by looking at it. For all pricking-out and hardening-off processes, and where some covering at first is necessary, we have found nothing better than calico not over thick. We have covered beds of Pelargoniums and Calceolarias with this, watered when put out, and they required no more trouble than exposing them gradually a few days before planting out finally.

Finished in the meantime fresh arranging verandahs, conservatories, &c. Two correspondents have sent us a line in reference to previous remarks. One has a small lean-to house, the other a small span-roofed house, and they ask how they are to change the appearance of such houses. One having always kept the tallest plants at back, falling regularly to the front at the pathway, and the other having always kept the tallest in the centre, and the lowest at the sides, of course, in either house, whenever you open the door, you see the whole. Well, what we mean is simply this—Let such arrangements remain as they are for a week or two, and then try and arrange the plants not in a regular sloping bank, but as so many pyramids, with low valleys between them, and, perhaps, a taller plant or two in the middle of such valleys, as a point for the eye to rest on. Even in a small lean-to house, you might have two or three higher ranges across the house with lower bays and valleys between, and an infinity of plans could be adopted, which would enhance the attraction by preventing your ever seeing so much as the whole at once. Had we only one such house, and could have our way, we would fresh arrange the plants in pots every week, so as to have variety, instead of sameness, to contemplate. It is well that change and variety are so pleasing to human nature, and even the gardener will act wisely if he avoid as much as possible the stereotyped in manner and design.

Shading.—We noticed last week the spattering the glass with white-coloured water. If not enough be given at once it may be repeated, or put on thicker, or a brush may be used. Let us warn all, however, that for this shading purpose whitening or chalk be used; avoid lime by all means, if you would not injure paint or putty. We have never had shading for our conservatory; in fact, have no regular shading material for anything. Many plants taken to the conservatory had a slight shade from plants above them, as late Vines, &c., before, and therefore such a fierce sun as we have had would have been prejudicial to them. We therefore wanted a shade that would be enough for the purpose, stand until autumn, and not be unsightly, nor yet too dense for a dull day. We have tried many modes, and successfully enough, but we have found none more simple than skim milk, with a little powdered whitening mixed with it—say as much whitening as the size of a walnut—reduced to a fine powder, and thoroughly mixed with two or three quarts of milk. We would advise those trying the scheme to do a piece of glass first, let it dry, and add to the milk or whitening as they require less or more shading. We have not applied the shading mixture quite so well as usual, as it looks a little run; but if it be put on quickly and thinly by one man with a brush, and another follow with a dry duster brush, merely daubing it quickly with the points of the dry brush, the shading will have the appearance of shaded ground glass, and look neat enough for anything. The least

quantity of whitening in the milk will give as much shade as Hartley's rough glass.—R. F.

COVENT GARDEN MARKET.—May 15.

Notwithstanding the cold wind prevailing during the last few days, abundance of produce, both forced and from the open ground, is brought in by the growers. Of Peaches and Nectarines there is a good supply, and foreign imports are well kept up. They comprise Cherries, Strawberries, and Apricots, with the usual description of vegetables.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ....½ sieve	2	0	to 3	0	Melons.... each	4	0	to 8	0
Apricots .... doz	0	0	0	0	Nectarines .... doz.	20	0	36	0
Cherries .... box	3	0	4	0	Oranges 100	5	0	10	0
Chestnuts .... bush.	0	0	0	0	Peaches....doz.	30	0	48	0
Currants.... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	0	0	0	0
Black .... do.	0	0	0	0	kitchen.... doz.	2	0	4	0
Figs .... doz.	0	0	0	0	Pine Apples .... lb.	5	0	8	0
Filberts....lb.	0	0	0	0	Plums .... ½ sieve	0	0	0	0
Cobs.... lb.	0	9	1	6	Quinces .... doz.	0	0	0	0
Gooseberries .. quart	0	9	1	6	Raspberries ....lb.	0	0	0	0
Grapes, Hothouse..lb.	5	0	10	0	Strawberries .... oz.	0	6	1	0
Lemons 100	5	0	10	0	Walnuts.... bush.	10	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes .... each	0	6	to 0	8	Leeks .... bunch	0	3	to 0	4
Asparagus .... bundle	4	0	7	0	Lettuce .... per doz.	1	0	2	0
Beans, Kidney, per 100	1	0	2	0	Mushrooms .... pottle	1	6	2	0
Scarlet Run. ½ sieve	0	0	0	0	Mustd. & Cress, punnet	0	2	0	0
Beet, Red.... doz.	2	0	3	0	Onions.... per bushel	4	0	5	0
Broccoli .... bundle	2	0	3	0	Parsley.....per sieve	3	0	4	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsnips .... doz.	0	9	1	3
Cabbage .... doz.	1	0	1	6	Peas.... per quart	3	0	5	0
Capsicums.... 100	0	0	0	0	Potatoes .... bushel	4	0	6	0
Carrots.... bunch	0	6	0	8	Kidney .... do.	5	0	6	0
Cauliflower .... doz.	3	0	6	0	Radishes doz. bunches	0	9	1	0
Celery .... bundle	1	0	2	0	Rhubarb .... bundle	0	4	0	6
Cucumbers.... each	0	6	1	4	Savoys .... doz.	0	0	0	8
pickling .... doz.	0	0	0	0	Sea-kale .... basket	0	0	0	0
Endive .... doz.	2	0	0	0	Shallots .... lb.	0	8	0	0
Fennel .... bunch	0	3	0	0	Spinach .... bushel	2	0	3	0
Garlic .... lb.	0	8	1	0	Tomatoes.... per doz.	3	0	4	0
Herbs .... bunch	0	3	0	0	Turnips .... bunch	0	6	0	0
Horseradish .. bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0	0

TRADE CATALOGUES RECEIVED.

William Bull, King's Road, Chelsea, London, S.W.—*Retail List of New, Beautiful, and Rare Plants.*

James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, London, and Coombe Wood, Kingston Hill, Surrey.—*Catalogue of New and Beautiful Plants—Plant Catalogue—List of Select Softwooded and Bedding Plants, &c.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

Back Number Required.—2*s.* 6*d.* will be given for No. 169, of The Journal of Horticulture, date 21st June, 1864, by Mr. Thomas Kelly, 60 and 61, Albany, Liverpool.

Insect on Rose Trees (*E. Collins*).—The insect which has eaten the bark from the shoots of your standard Roses is a Curculio, or Weevil, and we think, from the specimens sent, C. sulcatus. Your best mode of exterminating it is to spread a white cloth beneath each bush after dark, and then shake the bush. The marauders fall on the cloth and may then be easily destroyed. This may be repeated twice or oftener every night, until no more are captured. The Grass you mention is hardy.

Orchard-house and General Garden Management.—"I happen to have a similar quantity of ground, two acres, but cannot, like 'C. P.,' make a sixteen-year-old lad and an occasional labourer, added to my own slender services, suffice to keep such a garden—at present without houses of any kind—in such order as I wish to see it. Would 'C. P.' give us some further insight into his mode of procedure; how he has laid out his ground, whether he luxuriates in much flower culture, or has much of his ground in open shrubbery? as these points materially affect the expenditure of labour. If I could work as 'C. P.' does in the management of his garden, I should not hesitate to put up orchard-houses, but at present the extra tax in skilled labour this would entail deters me. I hope 'C. P.' will be induced to favour the readers of the Journal with another instalment, that we may find his talisman and so extend our gardening operations without increasing our staff.—Subscriber."

Asparagus Blight (*J. C. D.*).—A parasitical fungus has attacked them, closely resembling Uredo fosculosum, but quite new to us. We should cut off all the shoots attacked by it before the fungi shed their spores, and apply two or three strong dressings of common salt to the bed.

Nectarine Tree not Bearing (*A. B.*).—We see no reason why in a house which becomes so hot in summer, and without artificial heat, your Nectarine tree did not ripen its wood, as well as show and set blossom-buds, though we do not think there is any gain in taking much from a tree the second year after planting. There is nothing in the character of the house to account for the tree being unfruitful, as the heat in sunny days ought to have ripened the wood in the autumn if the tree had obtained justice. Excessive heat during the summer could be guarded against by more ventilation and slight shading in the brightest days. A very small proportion of a pennyworth of whitening, if employed to colour some water white, and thrown on the glass outside with a syringe, would break the force of the sun's rays in May, June, and July, whilst the sun could scarcely be too bright to ripen fruit and to mature wood. We think your want of success has been owing to your leaving the tree to take its own mode of growth, which rendered your consulting the admirable directions of Mr. Bréhaut and Mr. Rivers of but little use to you, as whatever system is adopted it must be carried out thoroughly if success is to be obtained. Your tree was planted two years ago in fresh soil against the back wall of your house, "and last year it covered itself with long willow-like shoots—became a bush in fact." Now, if the tree was in the bush form when you obtained it, it might have been best to have continued it in that form, pinching the strongest shoots first, as Mr. Bréhaut advocates, and, after securing the necessary number of equal-sized shoots, stopping them when 15 or 18 inches in length, so as to swell the buds behind and lessen growth, as the most of the growth made afterwards would be cut away at the winter pruning. From your description, however, your tree had been allowed to take its will, and produce as many as it liked of its willow shoots all last summer, unstopped or unchecked, and so thickly, we presume, that the sun could not reach them. The fact of the leaves remaining all the winter is a proof that the wood was not ripened; and though these leaves were at the points of the shoots, and therefore of less consequence, still the wood nearer home would have been better perfected if they had been stopped in summer and thinned out so as to let the sun play upon them freely. For a good fruit-bud to be formed at the base of a leaf, the sun's rays should have access to that leaf. Again, if you had decided on the bush or even the pyramidal form, the tree would have been better planted in your border farther from the wall, so that the sun and air would have had access all round it. You leave us in doubt, however, as to whether you mean this bush form to be continued, as you ask, with this pinching on Mr. Rivers's plan, "how the tree is to get the shape I want it, and cover the wall?" The tree having had its own way last summer, most likely the gardener did quite right in cutting out in February the rankest, most luxuriant shoots, and might have gone farther and shortened the others left; but, presuming, as you say now that these shoots, though unfruitful, are healthy, and studded all over with young shoots, some 2 inches or so apart, then we would advise as follows:—If you determine on the bush or pyramidal style, allow the terminal young shoot to grow 6 inches or more before stopping, slip off with a knife fully one-half of the young side shoots coming, and stop the others according to Mr. Rivers's advice. You will not have such a thicket of third and fourth growths as you imagine, and when they do become thick you may thin them; most of them will be removed at the end of autumn. The lower part of these side shoots—those that are puzzling you now, will all be stored with fruit-buds next season if you give plenty of air and sun, and little water after September—in fact, they will be very much like your Cherry tree, which is so fruitful and needs little stopping because it is old. The stopping above referred to will make a young tree whilst vigorous as fruitful as an old one. If you mean to cover the wall as soon as possible, spread out these shoots in the fan style, leaving the centre shoot well cut down, so as to furnish shoots to fill the centre. Now, you may adopt one of two modes. First, the old mode by which the shoots formed this summer bear the fruit the next, and a fresh shoot taken from the bottom replaces them. In this case you save the young shoot that is coming from near the end of last year's shoot to continue the leaders and fill the wall, stopping, or not stopping, according to its strength, and at once you may remove about half of the other small shoots with a sharp knife, doing it by degrees, so as not to interfere with root-action, but so as to leave the young shoots on the upper sides of last year's shoots about 12 or 15 inches apart, allowing each to grow that length before stopping. On these little shoots that now so bewilder you, thus thinned, you will depend chiefly for your next year's crop. Another plan is to make your present shoots, and the terminal fresh ones now coming, the main leaders and fixtures; thin the small side shoots only half as much—say to 6 inches apart, stop these when 3 or 4 inches long—make them into short spurs in fact—and keep them as such, merely thinning them out a little when too thick. By this plan, when you fasten your main shoots to the wall, you may do all the rest without nailing, tying, or much winter pruning. By the older and generally practised mode against walls you must cut out the shoot that bears this season, and be supplied with another from its base to succeed it next year.

Burning Weeds (*E. P.*).—There is no law prohibiting the burning of weeds in a garden. If any damage is occasioned by such burning the person burning the weeds would, of course, be liable to an action to recover the amount of that damage. Although there is no law prohibiting the burning of weeds, yet if the smoke so caused is offensive to a neighbour, it would be well not to burn them, except when the wind blows in a direction from his premises.

Wireworms (*Inquirer*).—There is no wholesale mode of destroying these pests except by paring and burning 9 inches in depth of the entire surface of your garden. Frequent digging and picking them out thins them very much. Growing a crop of White Mustard is said to drive them away. Powdered oil cake about seeds when sown, or around the roots of a plant, are said to keep the vermin from injuring them.

Cucumbers not Swelling their Fruit (*H. T. M.*).—With the healthy Cucumbers which refuse to swell their fruit, your only chance is to diminish vigour by taking away some of the older and larger leaves, give less water, more air, and thin out the young fruit when young. For those you intend planting we would advise using nothing but fresh sandy loam—no manure of any kind—and if that do not give strength enough afford some clear manure waterings. Avoid in such a case rotten dung, leaf mould, and anything of the kind in the compost. These vagaries, and the different diseases which affect Cucumbers, are little understood. Young plants and fresh poor soil are the chief remedies.

Gas Stove (*H. R. J.*).—Being without a flue, it would be injurious to plants. Let no representations induce you to use it among them.

Flower-border Planting (*An Old Subscriber*).—Arrange your plants thus:—Ageratum, if tall kind, Stella Pelargonium, yellow Calceolaria, Iresine Herbstii, white Verbena, purple Verbena, Gazania splendens, Lobelia speciosa. If a ninth row is wanted have strong plants of Trentham Rose Pelargonium behind the Ageratum; but the eight ought to be ample.

Rose Leaves Blistered (*The Cedars*).—They are blistered by cold and wet. They will improve as the weather becomes warmer, and the roots establish themselves in the fresh soil. We hope you did not place the bone manure in contact with the roots, nor used it excessively.

Strawberry Scapes Eaten (*Fragaria*).—We think ants are your troublers with the Strawberry blossoms, and if so, guano will drive them away. If that do not succeed, use lime water on the ground, and if not effectual enough, mix arsenic with sugar and place it in saucers, covered with other saucers, and with a piece of lath wood across between, so that there will be plenty of room for the ants to enter without admitting any larger living thing.

Archerfield Early Muscat Grape (*Grape-grower*).—At first Mr. D. Thomson thought this Grape a much earlier ripener of its fruit than the Muscat of Alexandria, but immediately that he had proved that his opinion was not correct he announced the fact; and it is now clear that it is only a good variety of the Muscat of Alexandria, setting and stoneing more freely.

Heating a Small Greenhouse (*E. B. B.*).—Were your house not so small, 18 feet by 8, we should say, Try another Hays's stove at 60s., as one is not sufficient. If you can obtain no more than 5° of extra heat from it, of course that would be of no use in a severe night in winter; but we think you could obtain much more heat than that by burning the fuel more rapidly—that is, giving a little more ventilation. We have not had the chance of trying Hays's stove, but the commonest iron stove, with a pipe funnel from it, ought to give three or four times the heat you specify. The great danger of a common small iron stove arises from the sides becoming too hot, and parching and burning the air. You would see what was said lately in "Doings of the Last Week," as to the importance of the fire-box standing 2 or 3 inches free of the sides of the stove. Then the whole outside is pretty equally heated, and is never so warm as to much vitiate the air. Where an outside stoke-hole is no objection, on the score of cleanliness, we know of no better plan for such a small house as yours, than having a small flue below the floor, the floor tiled, and the tiles forming the top of the flue. Such an arrangement, with the flue beneath the pathway, is very comfortable in winter, as the lover of plants need never have cold feet. We hear some complaints as to the difficulty of obtaining good fuel for Hays's stoves. Of course without the prepared fuel the stoves will not answer. Try giving more air to the fuel.

Constructing a Small Greenhouse (*B. B.*).—You will form a very good idea what such a house, about 18 feet long, whether span-roofed or a lean-to, will cost, by looking at our advertising columns; but to finish it partly as a greenhouse, partly as a hothouse and propagating-house, and heat all properly with hot water, we fear there is little chance of doing all for £20. Your cheapest plan will be to use large squares of glass, and have a fixed roof without sashes, but with strong rafter sash-bars, say 18 or 20 inches apart, on Mr. Rivers's plan. If the end of the dwelling-house is long enough, then a lean-to roof, say 12 feet wide, 10 feet high at back, and 6 feet in front, would be the cheapest, as you would only have the ends and front walls to build. With plenty of heat a span roof would be the best, with the wall of the dwelling-house for the north end; and if this were 13 or 14 feet wide you could have a platform in the centre and a broad shelf or stage all round—say pathway, 2½ feet; side platform, 2 feet; centre platform, 5 feet. In the hothouse part the side platforms could be made into hotbeds, with hot water beneath them. As the ground is highest next the house, the farther end would be the best place for the boiler; and the hothouse part might as well be at that end, with means of heating that part separately, and then continuing the heat to the greenhouse part as wanted. You may heat several such houses from one boiler, provided the boiler is so low that the top of the boiler is lower than the lowest pipe in the houses. A small boiler would heat your proposed house. There will be no difficulty in heating your dwelling-house, as well as these proposed houses, from a boiler placed underground in the wash-house. To do this, however, the boiler will require to be of a good size. From a boiler so placed you may take hot water to the top of the mansion, and distribute it in the different storeys as wanted. In such a case, however, it would be as well to have the warmest end of your proposed plant-houses next the mansion, if the boiler were placed out of doors. We spoke of the other arrangement, merely because a person might enjoy a greenhouse temperature when a hothouse temperature would be oppressive.

Couch Grass in Asparagus-beds (*Greenmellow*).—You will best clear the beds of Couch Grass by taking the latter up with a fork, and if this be carefully done much of the Couch may be removed without injuring the Asparagus roots. By persevering for a year or two in forking up the roots whenever a blade of the Couch Grass is perceived the ground will be cleared, and a dressing of salt now, equal to 2 lbs. per square yard, will help to destroy the Couch. Never allow a blade of it to be seen.

Rust on Camellia Leaves (*J. B. N.*).—The leaves are affected with rust, arising from excessive moisture and imperfect root-action. The only remedy is to prevent water dripping on the leaves, and to keep the soil drier, so as to encourage a more healthy root-action. The leaves should be dusted with fresh-slaked lime and flowers of sulphur.

Pans for Bell-glasses (*A. C. C. H.*).—You may procure pans with a double ridge or ledge for the glass shades to rest on of any of the principal seedsmen, and at many earthenware shops.

Cyclamens not Flowering (*Idem*).—As your Cyclamens grow well but do not flower, perhaps you do not afford them a light and airy situation, which is all they require. No place is so suitable for them from September to the end of May as the shelf of a greenhouse, and after that an open sunny situation out of doors, the pots being plunged to the rim in coal ashes. They do well in a compost of equal parts of turfy light loam sandy peat, and leaf mould, good drainage being provided.

Cleaning Flower-pots (*W. H. Y.*).—The best plan that we have tried is to place the pots requiring cleaning in a tub, cover them with water, and after allowing them to become well soaked, say for a couple of days, to wash them well inside and outside with a spoke brush or any old or half-worn hard brush.

Twelve Greenhouse Plants for Flowering in July (*A Subscriber*).—The following will flower about July; but to have plants in flower at a given time it is necessary that they be grown specially for the purpose, and forwarded or retarded as occasion may require:—Acrophyllum venosum, Boronia serrulata, Crowea saligna major, Leschenaultia formosa coccinea, Pimelea Hendersoni, Polygala Dalmaisiana, Phænocoma prolifera Barnesii, Tremandra verticillata, Pleroma elegans, Dracophyllum gracile, Indigofera decora, and Genetyllis tulipifera.

Twelve Gloxinias (*Idem*).—*Erect-flowering:* Rex igneus, Guido Reni, Novello, Comte Didinsky, Lilas franc, and Marquis de St. Innocent. *Drooping-flowering:* Wilsoni, Leviathan, Bird of Paradise, Lady Augusta Yorke, The Gem, and Impériale Blanche.

Six Achimenes (*Idem*).—Parsonsii, Longiflora major, Carminata splendens, Ambroise Verschaffelt, Magnet, and Gem.

Planting Cannas, Daturas, and Artemisia annua (*Tyro*).—Cannas have large foliage, and attain a height of from 3 feet to 6 feet. They should be planted from 2 to 2½ feet apart if the plants are strong, or from 1 foot to 18 inches apart if small. Datura fastuosa Huberiana is a tall-growing plant, having large trumpet-shaped flowers. Being of a strong habit the plants should be placed 18 inches apart; but they will not thrive out of doors except in warm situations, and they must be strong when planted out. They attain a height of 3 feet. Artemisia annua grows 4 feet high, and should be planted from 1 to 1½ foot apart; but we consider it worthless for flower-garden decoration, Wormwood being far more silvery in its foliage and quite as stately in habit.

Lily Bulbs from Japan (*S. C.*).—The bulbs of the Lilies from Japan should be put singly in well-drained pots 7 inches in diameter, some of the roughest parts of the compost being placed over the drainage. The pots should then be filled half full with a compost of turfy loam two-thirds, and one-third leaf mould, adding sharp sand if the loam is not sufficiently sandy. If you have it you may also add one-fourth fibry sandy peat. The compost should be broken rather fine, but not sifted. The bulbs should be placed with their bases resting on the soil in the centre of the pots, and be covered with soil about an inch above their crowns. A gentle watering having been given, the plants should be placed in a light airy situation in the greenhouse. Keep the soil moist, but not very wet, until the roots start; then water more freely, and when the shoots are a few inches higher than the rims of the pots fill up around the stems with soil. Water freely until the growth is complete; then lessen the supply, still keeping the soil moist. Winter in a greenhouse, and keep the soil rather dry.

Poa trivialis argentea elegans (*Idem*).—This very handsome dwarf Grass is hardy in well-drained gravelly soils, but requires the protection of a frame or greenhouse where the soil is wet and heavy.

Tropæolum tricolorum Culture (*R. F. Wheeler*).—The plant, so far as we know, cannot be successfully raised from cuttings. It is raised from seed, and by layering the wiry stems in the pot in the early stages of its growth, by which process small tuberous roots are formed by autumn, but not always. The most certain method is from seed, and plants so raised usually flower in the third year. It is a greenhouse tuberous-rooted plant, commencing to grow in autumn, flowering in April, and dying down in summer. Tropæolum pentaphyllum is a tuberous-rooted plant requiring the temperature of a greenhouse. It is raised from seed, is a climber, and more robust than T. tricolorum.

Sowing Pentstemon Seed (*Idem*).—The seeds should be sown now in pans well drained, and filled to the rim, or nearly so, with light turfy loam. Scatter the seeds over the surface after having made it smooth, and cover with fine soil to the depth of a quarter of an inch. The pan may then have a gentle watering, and be placed in a cold frame, or on the front shelf of a greenhouse, shading it from sun, so as to keep the surface moist until the plants appear, then discontinue shading, and admit air freely. Keep moist, and when the plants are large enough to handle, prick them off in a bed in the open ground, shading for a few days until established, and finally planting out where required.

Tall-growing Lobelias (*Idem*).—Some of these are very handsome when planted out in summer, if kept well watered. We do not think them worth a place in a greenhouse, as they do so well out of doors in summer.

Passifloras for a Greenhouse (*Idem*).—The following do well in a greenhouse—Impératrice Eugénie, Newmanni, Bellotti, Shepherdi, Comte Nesselrode, and P. edulis foliis argenteo-variegatis.

Stephanotis floribunda in a Greenhouse (*Idem*).—It is a stove plant, and is starved in a greenhouse, but does tolerably well in a heated vinery. It will, however, flower in a greenhouse. Your other question will be replied to fully in a week or two.

Sulphur Fumigation of an Orchard-house (*E. S.*).—For your house 21 feet by 14 feet, you will require two pots of lime, as described by Mr. Rivers, and you may sprinkle over each 2 ozs. of flowers of sulphur.

Destroying Slugs (*Amateur*).—We find nothing equal to lime which has been placed under cover and allowed to fall of itself. This sprinkled over the whole surface of the garden once or twice a-week a little after dark, proves effectual, if its application be persevered in, a dressing being given prior to digging, and immediately afterwards. If you have tried this and found it fail, we recommend the surface to be pared off and burned. Hedgehogs do not care to eat slugs, but a few ducklings turned in now would not trample anything much, and would devour a great many. The ducklings, in conjunction with dusting of the soil at dusk after a wet day with lime, would soon clear the ground.

Lilium auratum Seedlings (*Inquirer*).—We would pot off the seedlings, placing two or three in a seven-inch pot; but if you cannot pot them off without disturbing and injuring the roots, we would defer doing so until autumn, and then pot them off singly in October. The soil we recommend for potting is one-half turfy loam, one-fourth sandy fibrous peat, and one-fourth leaf mould, adding sand liberally. The cross between L. auratum and the Scarlet Martagon will most likely produce something desirable in colour. You may exhibit Trichomanes radicans as a British Fern.

Disa grandiflora Culture (*Idem*).—This succeeds excellently in an airy and shady part of an ordinary greenhouse, it being very impatient of bright sun, though it likes light and air. It requires an abundance of water, so much so that when the plant is growing, winter and summer the pot may be set in a saucerful of water. The most suitable soil is sandy fibrous peat, with a few bits of charcoal intermixed. If the peat

is not sandy, silver sand should be added liberally. It is essential that the pot be well drained.

Parsnip Seed Eaten (*I. R.*).—The Parsnip seeds or rather husks have had their vitality destroyed by some weevil or beetle, and not by slugs as you suppose, for the seeds have never germinated. Had you scattered soot in the drills before sowing, we think the seeds would have been preserved, and as the ground is now infested with slugs, we advise you to scatter fresh lime over it at dark after a showery day.

Temperature for Muscat of Alexandria Vine (*A Young Gardener*).—The Muscat of Alexandria will do fairly in a house having a night temperature of 65°, with a slight increase during the flowering period. The temperature is not too low, forcing being commenced from the middle of March to the beginning of April, in fact, it will do well in such a temperature. There is no better variety than the Muscat of Alexandria, though the Bowood Muscat is thought to be a more free setter. The Muscat Hamburgh will succeed in an ordinary vinery, and so will the White Tokay, if afforded a little fire heat when in flower, and when the fruit is ripening. The White Tokay is a fair setter, being about equal to a Muscat in that respect. The Muscat of Alexandria does as well on its own roots as when worked on the Black Hamburgh, if not better.

Pelargonium Leaves Spotted (*O. E. S.*).—The leaves were spotted with a fungus, arising most probably from the soil in which the plants are growing being too rich and wet. The atmosphere is also too moist, and not sufficiently ventilated. Keep the soil drier, and admit more light and air. If the border is badly drained, that will be sufficient to cause the spots.

Prunus sinensis flore pleno Pruning (*Quack*).—The plant not having bloomed will have made new growth, which you cannot now shorten without placing in jeopardy next year's bloom. You may, however, cut out any straggling shoots, leaving enough new ones to form a compact plant. It should be done forthwith. The secret of a good bloom is to secure a good growth, and have it well ripened by exposure in an open, sunny situation.

Cucumber Culture (*Idem*).—Extremes of heat and cold are not good for anything, and success under such circumstances as you mention is the high road to failure. The thermometer at 105° occasionally will do no harm apparently at the time, but you may ere long see your plants die in an hour. Air should be given when the temperature rises to 80°, and even earlier; and what is meant by not exceeding 80° is, that heat must not be exceeded without air being plentifully given, which is sound practice. It is well, too, if the thermometer do not fall below 65° at night; but we have had it as low as 55°. The water used for watering will do well after this if it be warmed in the sun or by hot water.

Market Gardener (*J. W., jun.*).—We do not know any of the market gardeners who attend Covent Garden Market with their produce.

Roses not Flowering (*W. A. O.*).—Roses which have made their growth without flowering should not be cut back unless of greater length than necessary for the purpose required; but they may, if straggling, be cut back to the sixth leaf if weak, or to the eighth if strong. As regards Teas, apply to Mr. Baily, 113, Mount Street, Grosvenor Square, London.

Jasmines Shedding their Flowers (*G. P.*).—From what you say we should think the flowers continue but a short time from the house being too warm, and the roots of the plants not sufficiently moist. Perhaps slight shade would prolong the bloom. Keep them as cool as you can.

Plum Tree Blighted (*A. H. J. L.*).—The leaves are attacked by a very peculiar parasitical fungus on their under surface. Dust under the leaves perseveringly with flowers of sulphur, and have the surface of the border over the tree's roots mulched, and watered during dry weather. The Plum, we think, from your description, is the White Magnum Bonum.

White Lobelia (*W. S.*).—Your seedling Lobelia is the best of the white varieties we have seen. If compact in its habit and growth it will be a great acquisition.

Name of Vine (*Live and Learn*).—The Vine leaf, very large and downy, resembles that of the Malvoisie de Trieste, a new sort, not perfectly known in this country. It produces very luxuriant foliage, but seems unfruitful, and not likely to be worthy of cultivation.

Roses (*J. Gresty*).—We are sorry that we cannot aid you. The varieties of these and of all florists' flowers are so numerous, and many are so nearly alike, that it is impossible to name them with certainty from cut blooms. (*S. E.*).—Your specimen was too much faded to form a correct opinion. We should think it might be Gloire de Dijon.

Azalea (*A. L. X.*).—Your Azalea is very distinct from any we have seen, but the roughness of the petals is decidedly much against it. As a decorative plant it will be very useful, and had it but the smooth outline of Criterion it would be first-rate.

Names of Plants (*J. B. L.*).—Scolopendrium vulgare, Lastrea dilatata, var., Asplenium fontanum, Asplenium adiantum-nigrum. (*A. H., Uckfield*).—1, Adiantum hispidulum; 2, 3, and 4, all varieties of Asplenium flaccidum. (*Philokoidomos*).—1, Saxifraga crassifolia; 2, *a. b.* Iberis semperflorens; 3, Myosotis, sp.; 4, Saxifraga Rottlerii (?); 5, Narcissus incomparabilis (double). *Ferns.*—1, Nephrodium effusum; 2, Pellæa hastata; 3, Pteris serrulata; 4, Selaginella Martensii, var. (*J. T., Newport*).—Orchis mascula. (*W. H. M., Killaloe*).—Arabis stricta. (*E. S. B. G.*).—Sedum Rhodiola (British). (*W. W. E. W.*).—1, Salix aurita, var.; 2, Salix phylicifolia, var. (*Pant*).—Ornithogalum virens. (*E. J., Atherta*).—Nepeta glechoma. (*Bradford*).—Abies cephalonica.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending May 14th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 8	29 866	29.842	82	51	57	53	S.	.00	Very fine; very hot and dry; warm at night.
Thurs. 9	29 912	29.825	75	47	57	53	S.	.00	Cloudless and very fine; exceedingly fine; fine at night.
Fri. .. 10	29.778	29.597	79	47	58	54	S.	.52	Cloudy and hot; thunder shower at noon; overcast at night.
Sat. .. 11	29.776	29.461	69	48	59	54	S.W.	.00	Violent thunderstorm 4-5 A.M.; cloudy; fine at night.
Sun... 12	29.484	29.341	58	43	58	54	S.E.	.07	Slight rain; densely overcast throughout.
Mon... 13	29.685	29.522	51	44	56	53	N.E.	.01	Overcast; hazy; densely overcast.
Tues. . 14	29.803	29.723	52	40	54	52	N.E.	.00	Overcast and cold; densely overcast at night.
Mean	29.758	29.616	66.57	45.71	57.00	53.28	..	0.60	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE ROYAL AGRICULTURAL SOCIETY'S POULTRY SHOW AT BURY ST. EDMUNDS.

I wish before it is too late to draw attention to the excessively early date fixed for closing the entries for the above Show, being more than six weeks before the day of opening. I do so in no unfriendly spirit, as the liberal prize list must make every exhibitor desire a great success.

At the time of year fixed for the Show in question, as every breeder knows, it is peculiarly difficult to tell so long beforehand what birds will be available for exhibition purposes. Your best hens may be broody, in which case they never appear to advantage, or a thousand other circumstances may occur, which may cause the intending exhibitor to prefer the forfeit of his entries to sending his birds. Still, had this been optional, I should not have drawn attention to the matter; but many may not have noticed that every certificate contains an engagement to pay a fine of 10*s.* for every pen not sent, thus entailing a loss of 15*s.* per pen in case of not sending. Under such circumstances the long date is absolutely preposterous and unjust, the only exceptions to the fine allowed being death or disease.

Such long notice cannot be necessary, and I beg to suggest that the date for closing the list be postponed till June 15th. No objection need be made on the score of past announcements, as a simple notification in the public journals would reach, directly or indirectly, at least nine-tenths of all the regular exhibitors; and I feel assured such a concession would be received with satisfaction by all.

For myself, I would be willing to risk the entrance fee according to the usual custom; but I am not willing to enter birds six weeks and a half beforehand in the middle of summer, with an engagement to pay 10*s.* in addition if I do not send them. Unless this be altered I shall keep my fowls at home, and many others will do the same.

The intention of the fine is evidently to secure a good show; but will have just the contrary effect now attention is drawn to it. The Committee have simply, with the very best intentions, made a mistake through want of practical experience in poultry-show matters; but we must all, for many reasons, desire to see such a prize list as they offer well supported by exhibitors, and I hope it is not too late to have the mistake rectified. It may assist in this if others will express their opinions.—Nemo.

[We consider this is worthy of the immediate consideration of the Society's Council. Time is needed for constructing the pens, therefore without altering the date of entry, it might be sufficient to announce that no fine will be imposed.—Eds.

BRAHMA POOTRAS.

Though never a breeder of these birds, yet as a fair judge of poultry in general, I may state the following:—

The pea-combed Brahma Pootras were first produced from

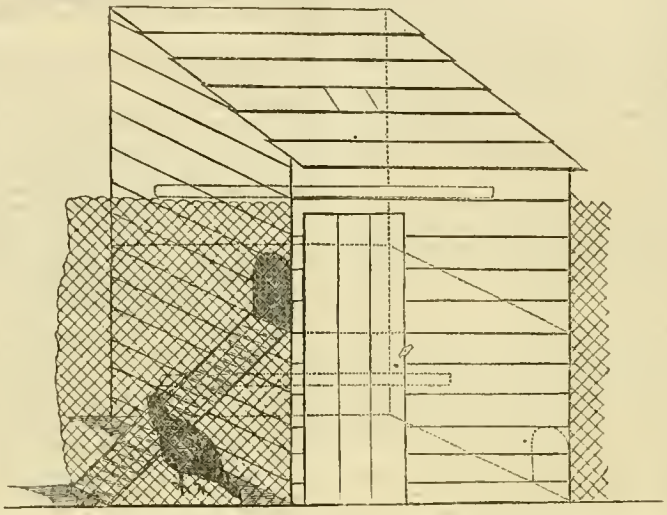
the Birchen-Grey Malay cocks, crossed with the Cochin-China or Shanghae hens. This cross gives the pea-comb and takes away the vulture hocks, and it is in this way they were first bred in the United States, I have heard.

There is no Dorking cross at all in Brahma Pootras. The pure Brahma Pootras are only the Birchen Grey breeds of the Shanghaes and Cochins, and have the straight or single combs, with vulture hocks. They are to be found pure in India and Burmah. The Malay cross gives the Malay expression to the head.

Brahma Pootra hens are rather less prolific than the hens of the Shanghaes or Cochin-Chinas. If a Dorking cross exists it has been made in England, of course.—Trevor, *otherwise* Newmarket.

PORTABLE POULTRY-HOUSE.

I enclose a sketch of a portable poultry-house I built last summer, and which has successfully answered its purpose. It is in five pieces, and can be taken down and put up by any carpenter in a quarter of an hour. The back, front, and sides are fixed together by eight bed-screws, the top also being screwed on. It is 8 feet high behind, 6 feet in front, the interior consisting of two compartments, 6 feet square, and the cost about £6 10*s*.



In the top compartment I kept five Dorking hens and a cock; in the bottom, eight Cochin hens and a cock. They were placed in the house last June, and, notwithstanding the severity of the winter, are all in good health, and have laid an average number of eggs. My garden is 33 feet wide, and the poultry-house is in the centre of a strip at the end 6 feet deep. You will observe I am enabled to keep two varieties distinct, the Dorkings from the top compartment running about 14 feet one way, the Cochins from the bottom a similar distance the other. I had it painted with Carson's anti-corrosive paint, and have never yet found water make its way into the interior.

By using this house I have found that with a limited space I have been enabled to keep some fifteen fowls in a healthy condition, and have been constantly supplied with new-laid eggs through a most trying season at a cost of not more than three farthings each, whilst the price charged in my locality —north of London—has never been less than 2*d*. each, and they were not always to be obtained when wanted.—S. F. A.

POULTRY SHOWS AND THEIR MANAGEMENT.

À propos of the Woodbridge Poultry Show.

Honesty is the best policy in every sense. Give a certain gentleman his due, for he is not so black as he is painted. So much for proverbs. We all remember the proceedings of the Woodbridge or Suffolk Poultry Society last year. To say the least of it, they were suicidal. I had my kick at them because they deserved it. Now I hold out my hand in friendship for the same reason.

They found themselves incapable of paying their debts, and they either had not the moral courage to say so, or they robbed Peter to pay Paul, giving a preference to some prizetakers to the exclusion of others. Moreover, they were not civil; and because letters were difficult to answer, they solved the difficulty by leaving them unanswered; but Peter was true to his name and firm as a rock. He meant to go share and share alike with Paul, and he obtained—at least I did—all he asked for.

"Well," says Common Sense, "then what more can you have to say?" I reply, A great deal. But the weather is hot, and times are hard, and many engagements last year in weightier matters than a poultry show were not punctually met. Pigeon shows, by the way, were rather in fashion in the City; so we will let bygones be bygones. The fruit trees are in blossom, the nightingale and cuckoo in full song, chickens are chirping, Pigeons are chirre-ing, and we are all thinking about flower and poultry shows. We cannot help being good-tempered, and we have no reason to be otherwise with the Woodbridge people; for those who have been paid their prize money, as I have been, have no reason to grumble, and those who have not been paid have, without doubt, received the following notice, which has been sent to me:—

"All persons having any claim or demand upon the above Society in connection with the Poultry Show held at Woodbridge on the 24th of May last, are requested to send the particulars thereof forthwith to Mr. John Dallenger, Public Accountant, Thoroughfare, Woodbridge, in order that arrangements may be made for their full and effectual discharge."

This is an announcement which ought not to be passed without a notice. It is the declaration of an honest man. If a poultry show should be held at Woodbridge this year—and I hope one will be held there—the promoters need not now fear but that they will be well supported. Having done wrong, they must now do right.

As to poultry shows generally, unless prize money is paid punctually and within a short time, regardless of the receipts and expenses—unless the whims, the fancies, and the interests of local exhibitors are swamped in arrangements for the general good—unless all is fair and aboveboard, and for the specific object of encouraging and improving the breed of poultry—such exhibitions, now rapidly increasing in number, will as rapidly diminish. We have really very little to find fault with in the management of poultry shows generally. They are a labour of love, and could never pay the managers if they made a charge for the time expended. The judging is for the most part fair, in spite of the grumbling of the unsuccessful. Exhibitors are by no means immaculate, and in some cases do not set either judges or committee men a good example. Let us all try if we cannot this year be honest, forbearing, good-tempered in defeat, and unselfish, so that a general good be obtained; and let us strive to promote a straightforward rivalry in exhibition, where nothing but dame Nature, judicious breeding, and feeding, shall put our birds in a foremost place, and make our poultry shows no longer exhibitions of the fine arts connected with scissors, files, tweezers, and thread.—Ecomet.

UNPRODUCTIVE PURCHASED EGGS.

Seeing in The Journal of Horticulture some eggs from White-crested Black Polish fowls advertised for sale in Hants, I wrote for a sitting, which in due course I received, and for which I paid 10*s*. 6*d*., exclusive of carriage. The eggs were placed under a hen sitting in a house with six others; at the end of the term there was not a sign of a chick in any one of the Polish eggs, but all the other six hens sitting in the same

house and under exactly the same conditions hatched out. There was not a fault to be found with the hen under which the Poland eggs were placed; I never in my life saw a hen sit better. I may remark that the eggs under the other hens were *not* purchased eggs. I wrote and stated the result of the sitting, but received no answer whatever. It is not to be wondered at that persons are becoming shy of purchasing eggs for sitting when the results are so frequently unsatisfactory. It is strange that poultry breeders cannot see that they are ultimately injuring themselves by not being more careful with the eggs they sell.—POLAND.

BREEDING POULTRY.

READ BY COLONEL HASSARD BEFORE THE CANADA WEST POULTRY ASSOCIATION.

IN regard to the mode of rearing chickens, much may be learned from books on poultry; but there is one subject on which they are silent—viz., impregnation. I had heard and seen that many fanciers and breeders, in this country especially, allow all breeds to run together at certain seasons. They say it is convenient to do so if the cocks agree, and if eggs are then taken they are useless. Granted; but after this promiscuous running together can you be certain that no future harm will arise from it? In the larger animals, such as cows, horses, and others, there is no doubt that the first impression lasts for some three or four births. A nobleman in England put a thorough-bred mare to a zebra: the offspring was striped. The next year he put the mare to a thorough-bred horse, and again the stripes appeared; and I am informed that for three or four foals all were more or less striped on the shoulders. Some years since, when in the Mediterranean, I had a pointer bitch, of which the greatest care was taken to keep the breed pure; she had a splendid litter of puppies, eight in number; I reared six; they were all pointers but one, which, though of the same colour, turned out a long-haired, ugly brute, almost useless. This was accounted for by the fact that the first litter had been by a vagrant in the street, similar in shape, but of different colour to the odd pup. I therefore recommend to all poultry breeders to keep their birds pure; above all, not to let the pullets that they intend to rear stock from have any intercourse with males not of the same breed. Perhaps some of the professional and scientific men in the Society can explain these things, which I do not profess to be able to do. I merely state the facts, and act accordingly. I never let any pullets of mine run promiscuously with other breeds: and I think what holds good in one case, will in another.

With regard to breeding, I think that the system of counteraction must be acted upon. I merely say I think, and do not lay down the law on the subject; but I am convinced that in breeding Pouters, Carriers, Cochins, and other breeds, to do well you must always act on this principle, which I will explain. It is valuable information to many, and breeders generally would have better stock by paying attention to the rule. It is this:—Supposing (take Carriers for instance) you have two first-class birds which you want to match, but on examining the points, you find both deficient in one point—say eye; you cannot match them, or you will perpetuate bad eyes—the very thing you want to avoid. No, you must select a bird with a very good eye, to counteract the deficiency in the other, although it may have some other inferior point. Again, in Pouters, if you have one of great length, you could afford to match it to one smaller, if good in other points. Again, in Cochins, if you want good colour, all other things being perfect, a dark cock should be put with light hens, and *vice versâ*—you will then get light and dark chickens, but never mealy or of doubtful colour. In a show pen it is quite the reverse; the birds must match in colour to a nicety. I have merely given these examples because they have come within my own experience; but in all other breeds the same thing applies: so that it appears there is a great deal to be studied and thought of, and attended to, even in breeding poultry. Here I should state something about breeding in-and-in, or from near relationship, which if continued will eventually ruin the stock. Mr. Ballance, of Taunton, Somersetshire, has, however, proved that by a judicious selection of strong birds from different broods, kept in different runs, the system may be successfully carried out; but there is no doubt that, if continued for many years carelessly, the stock degenerates. In a manufactured breed, like Sebright Bantams, it cannot be carried on at all, or degeneracy in markings, &c., will be at once apparent.

The next question is, What are the best ages to breed from? I have been compelled to breed from young stock generally; but I believe two-year-old cocks and young hens, or the reverse, would be equally good. So much depends upon what one has, that no rule can be always followed; and if the stock is healthy and not too old, and the aforesaid principle of counteraction attended to, the result should be good. For all sorts, get birds as nearly perfect as can be, and never breed from stock with glaring defects on one side or the other. I think that these rules should be followed until the breeder has a good stock on hand. He may then try experiments by crossing; but there is one thing he never should do—that is, sell any of this experimental stock as the genuine article, or at any rate without letting the purchaser know what he is taking. I once in England sold a gentleman a Black-breasted Red Game Bantam cock; he was satisfied in all respects but one; he said he thought he could trace on the wing a light portion that made him imagine he had Duckwing blood in him. I wrote immediately, and told him that one bird in the brood had turned out Duckwing; he asked me to take him back, which I did; but I was not obliged to do so, as there had been no deception on either side. At the time I was not aware that it mattered, nor did it much; for the bird was a splendid specimen.

A word or two about prices of birds of the same stock may not be out of place. Prices must vary according to quality, although birds are of the same stock. If you sell a pair or trio almost faultless, which the buyer may exhibit against you, you must get a remunerative price. You can let them have the same race, blood, purity, &c., for a less sum; but then there may be a difference in age, in points, or other respects, which lessens the price. I once purchased, from one of the first and best breeders of Cochins in England, a cock Cochin-China; the sum paid was, I think, £1 10s., which, for a bird coming from this yard, I considered very little, especially as my new purchase was own brother to the bird that had won the first prize at the Crystal Palace Exhibition. On his arrival, I did not like the comb. I wrote and said so, and I was told that a few weeks before he had a fight through the wires, and it was damaged. This I could see was the case; there was no fault in the bird for stock; but he was useless to exhibit. Had he not been so, I suppose £5 would not have bought him. Some of his descendants are now here. I merely refer to this to explain the reason why prices should vary for birds of the same stock, although they may be equally good to breed from. In closing these remarks, I would request all interested in our Society to endeavour to inculcate as far as possible into the minds of dealers and others that in poultry, as in other things, honesty is the best policy, and that no confidence can be established amongst us, especially when at distances apart, unless the birds advertised or sent are what they are represented to be.—(*Canadian Farmer.*)

HYBRIDISATION.

THE question of hybridisation to which Mr. West has directed our attention, is, as I have remarked, a very interesting, but it is also, I think, a very complex one. I do not think that Mr. West can be fairly charged with expressing any definite views, or adopting any particular hypothesis on the subject. His whole object evidently has been to elicit information and stimulate inquiry. I should be happy if I could assist in this laudable object; and with this view I now desire to add a few words to what I have already said upon it in the Number of the 7th of March last. Judging from the few replies called forth by Mr. West's appeal, the subject has not been apparently much studied.

Although in the article to which I have referred I hinted that the queen's mating with more than one variety of drones might afford a certain solution of the results of hybridisation, yet I must confess that my observations with respect to the queen herself, in certain peculiar circumstances to which I need not here more particularly allude, would rather tend to disprove the theory of double matings altogether. Again, in remarking upon the rapid deterioration of the pure Ligurians in most apiaries, I only expressed, I believe, the general experience in the matter. I also stated that in circumstances where, from the immense number of Ligurian drones in proximity, a true impregnation was probable, the results nevertheless were often unsatisfactory and puzzling. In making

that statement I by no means adopt the theory that this object is more easily attained, as some seem to think, when the drones are distant some miles. Indeed, I am not satisfied that we have yet sufficient evidence that, in this country at least, impregnation takes place at the extreme distances mentioned. A circle having a radius of five miles, is equal to ten miles in diameter, or thirty miles in circumference. How small, apparently, seems the chance of two solitary bees, starting five miles apart, meeting in this large area! Even though the flight were from opposite directions in a straight line, it would embrace, at the least, a distance traversed by each of two miles and a half. Be this as it may, I would reckon the chances of an Italian queen's true impregnation in proportion to the number and proximity of Italian drones. Moreover, I do not see that we have sufficient grounds for supposing that the "chances are always largely in favour of a cross."

Again, when I said that according to the doctrine of parthenogenesis a Ligurianised apiary should not deteriorate even in circumstances where impurities manifest themselves—a restoration to its normal condition in the absence of all foreign influence being only a matter of time—of course I reckoned upon any slight taint virtually disappearing before surrounding purer influences. Strictly speaking, however, absolute purity could never be attained; for once a taint exists, no power in nature can ever eradicate it wholly. Nevertheless optically, if not actually, any slight taint would be purged out by such agency.

I do not well perceive Mr. West's argument as to the selection of a particular larva for the future queen. If he has in view a pure stock, then no larva can be present in it which would develope into a doubtfully-marked, far less a black bee. If an impure stock is referred to, the particular larva selected would only affect the colour of the queen reared from it, but her better colouring would be no guarantee that it should be transmitted to her offspring.

The effects of breeding, according to strict rule, might be stated thus: If we breed from a pure Italian queen, crossed by a common black or English drone, the process of deterioration will be very rapid, by the same drone influence being continued, and, consequently, the first queen will be represented by a half, the second by three-fourths, and the third by seven-eighths impure. In the third generation, therefore, the queen will retain very little—one-eighth only of the Ligurian element, and her progeny again will retain still less. Here the deterioration is a constantly increasing one until, optically, the Ligurian element will entirely vanish. Starting with a half-bred queen, and always with the aid of pure Italian drones, the queen's purity would increase after this fashion—namely, ½, ¾, ⅞, 7½/8, 7¾/8, 15½/16, 15¾/16, &c., so that in seven generations, reckoning three generations being accomplished artificially each season, we would thus attain a purity of the queen as represented by 15¾/16, a pretty fair advance in the ascending process of Ligurianising. Still, as before stated, though we should proceed in the same way *ad infinitum*, we should, perhaps, never reach absolute purity. Like a person journeying from a point A to another point B, and by each successive move accomplishing a portion only of the distance beyond, however near he might attain the desired goal, he could of course never reach it; like the terms of an infinite series, the process is never exhausted.

But after all the question will, perhaps, be put, and it is quite a pertinent one—What is meant by purity in the Italian bee? How is it defined? What are its characteristics? Is it to be estimated by colour alone, or by colour and form? Is the worker to be the only test; or must we have regard to the queen also, and to the drone? For my own part, I can only say in answer to all this, that my experience is full of anomalies. My purest queens—these, for instance, I had from Mr. Woodbury—produced beautiful workers but indifferent drones. The queens themselves, too, were less highly coloured than some reared from them; while, on the other hand, subsequent queens that bred worse workers than the original queens, yet produced more beautiful drones. Nevertheless, my own idea of purity would be good colouring in all the three. At all events analogous dealings with respect to animals would lead us to select the best type of queen and drone to breed from. The Germans seem to hint at this, and, I rather think, try to carry it out in practice. Mr. Woodbury has had much experience in this matter, and from his known ability and great success in preserving the purity of the race for so long a period, any testimony coming from him would, I am sure, be highly appreciated.

Then as to hybrids. How are we to ascertain them? Of course there is no difficulty where the English or black element manifests itself in conspicuous characters; but there are certain close approximations to purity in the first generation not so easily determined. For instance, one queen I reared from the original pure one was more beautifully coloured than her parent, and her drones also were very superior, but her worker progeny, though all pretty well coloured and not a dark bee amongst them, were evidently inferior and inherited a taint, however slight, which increased more manifestly at the next remove. The ordinary observer might have a difficulty in noticing the difference, yet there it was and no mistake.

So far as my observations have gone, I have never found a queen's progeny, pure or hybrid, alter or vary in character. It remained the same during the queen's life. Nevertheless, there are differences in the offspring of different queens, hybridised apparently in a similar way, which appear to me inexplicable; but, perhaps, we should not after all attach too much importance to this want of uniformity, for we find analogies every day as respects other animals, the progeny in one case following more after one parent, and in another case after the other. Close and careful observations are needed in all our investigations after truth in this matter, but even then we may probably find that this is a question in nature lying beyond the ken of human knowledge, involving in its consideration constitutional and other latent causes which we can never explain.—J. Lowe.

OBTAINING ARTIFICIAL SWARMS WITH FRAME HIVES OF DIFFERENT CONSTRUCTION.

If "J. C. A.'s" Woodbury hives contain compound frame-bars, he may, I should think, overcome his difficulty by following the plan adopted by myself in making artificial swarms in frame hives of any construction with the aid of brood comb taken from a Woodbury compound frame-bar hive. I take a Woodbury bar of brood comb out of the frame, pierce the end of it with an awl or gimlet, insert a French nail (the head of which has been previously flattened), just so far into the end of the bar as to make it of the required length. The object of flattening the head of the nail is that it may rest steadily. I apprehend that none of "J. C. A.'s" frame hives are of less dimensions from front to back than the length of a Woodbury bar when taken out of its frame.

I have adopted this plan even with square Stewarton frame hives with slides between the bars, pasting the open parts over with brown paper, and in this state a very weak swarm of last year has stood the winter under an open shed. During even the most severe frosts of the past winter I did not cover up any of my hives, some of which are of the lightest description, one being a Woodbury super not more than half full of comb, and out of eleven stocks not one has suffered from exposure to the intense cold. All were under open sheds with a northern aspect.—M. S.

OUR LETTER BOX.

Weight of Eggs (*W. Thompson*).—Spanish eggs usually weigh 3¼ ozs., and these are as large or larger than these of other pure varieties; but we were shown recently some eggs of a cross-bred fowl that weighed 3¾ ozs. We may notice this cross after we have seen the hen.

Turkeys not Paid for (*H. B. L.*).—You have an easy remedy; ascertain, by writing to some one at Camberwell, whether there is such a man in Park Street, and if there is sue him in the County Court.

Poultry-keeping (*E. L. L., Wolverhampton*).—For full information on the subject of the different breeds of fowls and their management, we recommend you to consult the "Poultry-keeper's Manual," published at our office, price 7*s.* 6*d.*

Snails for Ducks (*E. S.*).—There is no doubt that snails and slugs would be a fattening diet for Ducks, but we never heard of their being employed specially for the purpose. The plant enclosed seems to be a luxuriant specimen of chickweed, but we cannot be certain without seeing its flowers. Do not be misled by the name into the belief that it, chickweed, is particularly liked by poultry.

Canaries Footless.—I have just hatched two Canaries which are deformed, being without feet, the legs being mere stumps. Can you account for this?—Lex.

[It can no more be accounted for than why Miss Biffin was born without arms.]

Preventing Second Swarms (*W H. J.*).—No extension of room can be relied on to stop the issue of a second swarm. Mr. Woodbury has frequently supplied queens at the price named, but may not at all times be in a position to do so.

WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 23—29, 1867.	Average Temperatnre near London. Day.	Night.	Mean.	Rain in last 40 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock after Sun. m. s.	Day of Year.
23	Th	Meeting of Royal and Zoo. Socs., 8.30 P.M.	67.8	44.5	56.1	14	0 af 4	53 af 7	35af11	3 af 8	19	3 32	143
24	F	Queen Victoria Born, 18.9. Anniver- [sary of Linnean Society, 3 P.M.	68.1	43.5	55.8	11	59 3	54 7	morn.	2 9	20	3 28	144
25	S	Crystal Palace Show.	66.7	43.4	55.0	15	58 3	56 7	7 0	3 10	21	3 23	145
26	Sun	Rogation Sunday.	67.2	43.0	55.1	17	56 3	57 7	36 0	7 11	☾	3 16	146
27	M	Anniversary Mtg. of Royal Geographical [Society, 1 P.M.	66.0	45.2	55.6	22	55 3	58 7	4 1	after.	23	3 10	147
28	Tu		67.7	44.8	56.3	15	54 3	59 7	30 1	25 1	24	3 3	148
29	W	Royal Botanic Society's Show.	67.0	44 3	55.6	13	53 3	0 8	56 1	36 2	25	2 56	149

From observations taken near London during the last forty years, the average day temperature of the week is 67.2°; and its night temperature 44.1°. The greatest heat was 91°, on the 28th, 1847; and the lowest cold 25°, on the 29th, 1864. The greatest fall of rain was 0.97 inch.

MERITS AND CULTURE OF HARDY PERENNIALS.

HERBACEOUS plants have for some years been almost discarded from the flower garden, their place being supplied by plants of tender habit exhibited in masses of one kind or colour; and to such an extent has this replacement been carried that the mere mention of the herbaceous border causes a smile. By many gardeners herbaceous plants are looked upon as well enough in a shrubbery border, and in some prominent situation in the flower garden when nothing better can be had; whilst to many they are only known by name, and yet these too often are most extravagant in their denunciation of them. The advocates of the new system are fully justified in banishing herbaceous plants from beds or borders where the disposition of the ground is geometrical or symmetrical; but their objections to such plants having a place at all in an irregular flower garden seem to me to be quite indefensible. It is all very well to have gardens wholly planted for effect; it is, I admit, the most beautiful and attractive mode; but is there no beauty in the flower of the herbaceous plant? Has it no charms of scent, of form, and of colour? It may be asked, Are herbaceous borders in winter uninteresting? I contend that even then they have an interest which bare earth, such as results in the bedding-out system, never gave. Even many of the most ardent admirers of the massing system now seek to maintain its superiority by pressing into their service those hardy perennials capable, from the character of their foliage or profusion of bloom, of superseding plants which are ill suited for enduring the vicissitudes of our climate. The most beautiful and enduring, as regards wind and rain, of the plants used for massing are old favourites, and many of them hardy perennials; and I am persuaded that with a return of the latter to their legitimate place in gardens we shall find their numbers rapidly increase, and the labour and expense of wintering bedding or tender plants considerably lessened.

The culture of hardy perennials would seem to many to be one of the simplest of garden matters, if an opinion may be formed from the position usually assigned to them. Any out-of-the-way place is thought good enough for herbaceous plants, and very often we find them associated with flowering shrubs, or a border is devoted to them with forest trees at the back. As a consequence many plants of the best species die off, and being replaced by others less choice, whilst the exhaustion of the soil is still going on, the appearance of the border rapidly deteriorates. Partly from the unsuitable situations in which herbaceous plants are placed, and in part from the little care bestowed upon them when in a favourable one, the impression has been made on many that these plants are poor at their best; many, too, do not care for them because they are not interested in plants, all they want being abundance of gaudy flowers when everybody has masses of red, white, and blue.

I do not wish to run down bedding plants or the system of planting in masses, but to point out a means of rendering that system more attractive, and affording greater enjoyment than at present, by reducing the space devoted to them, filling the beds better, and having the plants and all about them in higher keeping. On the other hand, it is foreign to my views to set up herbaceous plants as superior to bedding plants. These are most fitting for geometrical gardens, and the borders adjoining should be filled with kindred subjects; but to thrust into borders whose surroundings are of a different style a class of plants well suited for geometrical groups seems to me a want of taste. Hardy perennials are not recommended for a parterre or geometrical group, but I strongly advocate devoting a border to them wherever it will not interfere with the system of grouping; and such a border, I am convinced, may not only be rendered gay, but will be very interesting to many from a variety of flowers unfolding their charms day by day in succession for a large part of the year.

The place for a mixed border or group of perennials is not the beds or borders of a geometrical or architectural flower garden; these are for groups or masses of profuse-blooming spring and summer-flowering plants. As regards such no alteration should be made, except by concentrating the materials and labour wasted in extending the system to unsuitable positions. "Where, then, are we to have our groups and borders of hardy perennials?" The answer is simple. "Have you no other ground besides a geometrical flower garden?" "No." "Then you have no place for hardy perennials; do not attempt to grow them." "Yes, I have a long border by the walk leading to the kitchen garden;" another has a border by the side of a walk round an irregular flower garden, a third has a border, and another all these and beds in addition, which are filled, and often very badly, with bedding plants, but not because they are necessary for the design or surroundings, but simply because it is the fashion. Now these positions may or may not be suitable for hardy perennials; for, 1st, The situation should be open, not shaded by trees, or but partially shaded by those at a distance; 2nd, It should be sheltered from winds by a wall or trees at a distance, and should not be bleak; 3rd, The soil should be good, deep, and well drained, and not occupied by the roots of trees and large shrubs. If the borders have these essentials herbaceous plants will thrive in them; but if they are open and bleak, the choicer kinds will not grow well, and if shaded only plants requiring shade will succeed. If the soil is occupied by the roots of trees or large shrubs, only the commonest and more robust species should be planted.

The situation of a border for herbaceous plants may have any aspect. I write solely from experience, having found a majority of them thrive in a north border as well as and even better than in one with a southern aspect. If not

planted too near the base of a wall or fence, they do as well on its east side, exposed to the morning sun, as on the west side with the afternoon sun; and they are not affected by any ordinary vicissitude of our climate, if they have the shelter of a wall, hedge, or belt of trees, which, whilst it affords them protection from wind and cold, is not so near as to deprive them of the sun's rays, expose them to drip, or rob the soil by roots extending into the border.

The most suitable soil, being that in which a majority of the species thrive best, is a good, moderately light, sandy loam, from 18 inches to 2 feet in depth, and if there is a bed of gravel beneath all the better. Any good ordinary soil will, however, grow them well, but it must be well drained, and trenched to a depth of not less than 2 feet. If it is heavy a quantity of old mortar rubbish, sand, and cinders should be mixed with it; whilst if it is of a very sandy nature a dressing of manure will be advantageous. Many of the species, to succeed well, require a particular description of soil, which is best afforded by filling the holes with it at the time of planting. Some require calcareous soil, which is best secured by mixing with the soil of the border, at the places where they are to be planted, chalk broken rather finely, or old mortar rubbish; and in a similar manner peat, grit, or sand should be added as may be necessary. If the soil of the border is altogether unsuitable to the particular plant, remove the soil and replace it with some of the proper kind. A few species require very well-drained ground, and that should be afforded by placing a one-foot layer of brickbats or stones beneath the soil at the spot which the plant is to occupy. Some additional hints on soil will be given along with the names and descriptions of the different plants.

The planting of herbaceous plants is in a great measure regulated by the height they attain. The tallest should be placed in the back row, and others gradually diminishing in height towards the front or walk, along which should be planted the lowest growers, or those from 6 to 9 inches high, and not exceeding a foot. Hardy perennials vary in height from 6 inches to 6 feet or more: hence a border of them may contain as many as six rows of plants, and the distance between the rows and plants in each row should be equal to the full height of the plant; but as this would be too great a distance for the tall and pyramidal kinds, unless some half-hardy plant, such as Dahlias, were placed between them, they may, when the habit of the plant will permit, be planted more closely together. The plan which I as well as some others pursue, is to plant, at 6 inches from the edging, and 1 foot apart, a line of clumps, consisting of Snowdrops, Winter Aconites, Crocuses, and Siberian Squills, being careful to mix the colours; and as the foliage decays in summer advantage is taken of this circumstance to sow a line of Mignonette in April, which will take the place of the spring plants in summer, and make a fragrant edging to the border. The next row is 1 foot 6 inches from the edging, and consists of early spring and summer flowering plants not exceeding 1 foot in height. The third row is 18 inches from the second, and consists of plants not more than 2 feet in height, herbaceous Pæonies predominating. The fourth row is 2 feet from the third, and consists of plants attaining a height of 3 feet; the fifth row, 3 feet from the fourth, is for those growing 4 feet high; and the sixth and last row, 4 feet from the fifth, serves for the tallest-growing sorts. A border for perennials should therefore be 12 feet from the walk or edging to the last row, and that should not be less than 3 feet from the background, whether it be wall, hedge, or shrubs. For borders of greater width I would not exceed the number of rows, but allow more room between them, and plant a line between each of hardy and half-hardy annuals. The borders, of course, may be of any width, but the number of rows and the distance from plant to plant should be proportionate to the width of the border.

The best times to plant herbaceous plants are from the third week in September to the 1st of November, and from the middle of March to June; but preference should be given to early spring planting. It should be done during showery weather if possible, and yet it is far better performed when the ground is dry than when it is wet and cold. If dry weather set in after planting the plants should have a good watering at the time, as well as occasional waterings afterwards. During dry periods a good watering of the whole of the border will encourage growth and prolong the flowering, one good soaking being of greater service than a dozen sprinklings.

As regards support, which some of the plants require, it should be afforded early, and nothing is so good as iron stakes. These should be of various sizes and heights—viz., 2 feet and 2 feet 6 inches long, of quarter-inch wire; 3 feet and 4 feet long, of three-eighth-inch, and 5 and 6 feet long, of half-inch rod iron. All should be pointed, and 1 foot of the lower part painted with three coats of red-lead paint, the upper part receiving a priming of red lead and two coats of green paint. These are the most durable stakes that I have used. The next best are those made of Pitch Pine, which, being straight, tough, and free from knots, makes good stakes; they should be varnished. The canes of the Bamboo are also good, and so are rods of red deal, the part thrust into the ground and 3 inches higher being slightly charred over a wood fire, and whilst hot dipped to the extent charred in boiling coal tar. The upper part will of course require to be painted green.

The plants should be staked in good time, for it does more harm than good to tie them up after they have fallen down and rested on the ground. Those which have many small stems should not be tied up like a sheaf of corn, but have three or more stakes put in around them, and the tying material passed round these, so that the stems may rest against it. Plants with strong stems should have a stake to each, and in all cases they should be tied loosely, at least until they have attained their full growth. More than two or three stems should never be tied to one stake, and anything like a bundle should be avoided, as it destroys the effect and impairs the blooming qualities of the plant. The plants should be gone over every week or ten days, in order that all those requiring it may be staked or tied before they are damaged by wind.

The border will require attention as regards weeding, and should be frequently hoed and gone over to remove decayed foliage. If any troublesome-rooted weed, such as Dandelion or Couch grass, make its appearance it should be forked out, and if it has found its way amongst the roots of the plants a duplicate of the species or variety should be obtained and the plant taken up and freed of the roots of the weeds. In autumn as the foliage decays the plants should be cut off close to the ground, but not until their tops are quite lifeless. From any of the evergreen species having the foliage injured by frost the dead part should not be removed, as its remaining over the winter will serve as a sort of protection to the crowns from frost.

Early in October, during mild dry weather, the border should have a general trimming. All plants that have grown too large should be reduced in size unless wanted for propagation, in which case it will be best to take them up and divide them. Any that have raised themselves out of the ground so as to expose their roots, as is often the case with Primroses, Auriculas, &c., should be taken up and planted deeper in the soil. The evergreen kinds should not be disturbed in autumn but may be lifted in spring, and if necessary divided then, always provided it is not their season for flowering. The herbaceous and bulbous plants are best divided in autumn, as if it is done in spring when they are recommencing growth they are considerably weakened for the season's bloom. Towards the end of November a mulching of leaf mould from 1 to 3 inches thick should be applied, a peg of heart of oak, 1 inch square and 15 inches long, being placed by each of the bulbous and herbaceous plants to show their positions when the borders are being dressed in spring. Early in March the ground around the plants should be broken fine with a steel fork, and if the soil is heavy it should likewise be forked up in autumn before mulching it with leaf mould. The mulching should not be placed over the evergreen species, but be put closely around them. The bulbous and deciduous plants may be covered.—G. Abbey.

(To be continued.)

HOEING AND STIRRING THE SOIL'S SURFACE.

I observe in the Journal every week, in "Work for the Week" great stress is laid on the importance of constant hoeing in the kitchen garden. Whenever I try to impress this on any of my neighbours, they object to it as "letting in the drought" and say that except to destroy weeds, the less light land is hoed in summer, the better.

Our land is a light very sandy soil. Do you think it correct to keep the surface of such soil constantly open? Would it be better to keep the surface firm as my neighbours advise?—A Suffolk Subscriber.

[Beyond a doubt, the best practice is to keep the surface of the soil loose, whether that soil be light or heavy. The following extract from "Johnson's Science and Practice of Gardening" explains why the practice is beneficial:—"Hoeing is beneficial in consequence of its loosening the soil, as much, or more, as

by its destroying weeds. Moisture abounds in the atmosphere during the hottest months, and it is absorbed and retained most abundantly by a soil which is in the most friable state. Professor Schubler found that one thousand grains of stiff clay absorbed in twenty-four hours only thirty-six grains of moisture from the air; whilst garden mould absorbed in the same time forty-five grains; and fine magnesia seventy-six grains. Then, again, pulverising the soil enables it better to retain moisture absorbed. This we demonstrated some years since; and the reason is, obviously, because a hard soil becomes heated by the sun's rays much more rapidly than one with a loosened texture. The latter is better permeated by the air, which is one of the worst conductors of heat. We are glad to find our opinions confirmed by so practical and so intelligent a man as Mr. Barnes, gardener to Lady Rolle, at Bicton Gardens, Devonshire. He says, 'I do not agree with those who tell us one good weeding is worth two hoeings; I say, Never weed any crop in which a hoe can be got between the plants; not so much for the sake of destroying weeds and vermin, which must necessarily be the case if hoeing be done well, as for increasing the porosity of the soil, to allow the water and air to penetrate freely through it. I am well convinced, by long and close practice, that oftentimes there is more benefit derived by crops from keeping them well hoed, than there is from the manure applied. Weeds, or no weeds, still I keep stirring the soil; well knowing, from practice, the very beneficial effect which it has.'"]

VINES AND VINE BORDERS—NATURAL TEMPERATURES.

In my last I endeavoured to show Mr. Wills that off-hand remarks are not argument, and that they do not help to throw much light upon a subject under discussion, though they may sometimes be taken up and turned round in a manner the writer never contemplated. In this paper I shall try and answer "H. S."

Ever since I read that the orchard-houses at Sawbridgeworth conferred upon their occupants all the advantages of the climate of Toulouse, I have been trying to find out what that climate is, and to this day without success. When, therefore, I read in "H. S.'s" letter (page 274), this remark, "that in saying the 45th degree of north latitude enjoyed a mean temperature of from 70° to 73° during the summer months, he was only giving a fact that every gardener ought to be acquainted with," I was led, I was going to say for the hundredth time, to wish that information upon these subjects was more easily obtained, and that editors of horticultural works would give the matter their attention to the advantage of the public. "H. S." may know where to find the information; if so, he has been more fortunate than I, in which case, when I point out to him the important omission he has made, I hope he will supply my want. As I have said that I have failed to find such information in horticultural works, your readers will, I hope, excuse my going to meteorological publications, and, notwithstanding the uninviting name, let me here say that they will find the "Journal of the Scottish Meteorological Society," under the editorship of Mr. Alexander Buchan, as interesting a work on horticulture as they will meet with. Let me take the liberty of giving an extract from his paper "On the Weather Conditions which Produce Large Crops of Cereals," and they shall judge of the value of one at least.

"The weather of this period was drier in 1863, and the sunshine greater than in 1861; and the temperature of the day was about equal, but of the night about 3° lower in 1863: hence, though the temperature of the air was no warmer in 1863, but during the nights rather colder, yet the weather of that year must be regarded as more conducive to the ripening of the crops, owing to its greater dryness and to the greater sunshine, which brought the crops, as it were, into more immediate contact with the sun, so that they ripened under a higher temperature than was indicated by the thermometers placed in the shade." Again, he says,—"Thus at Sandwich, on the 26th of July, 1861, when the protected thermometers stood no higher than 55.1°, the ears of corn were ripening in a temperature of 80.2°."

Thus, I have found that no less an authority than the Secretary of a Meteorological Society is of my opinion, that for farming and horticultural purposes, mean temperatures which are founded on temperatures in the shade are only calculated to mislead in making comparisons between one year and another, and, therefore, we must follow the same rule in making a comparison between the French climate at the 45th degree of north latitude, and the temperature we should maintain in our Vinehouses during the day. But we have lately read in another journal some papers on the power which moisture in the atmosphere has, even though invisible to us, to prevent the loss of heat through radiation, and also the interesting discussions these papers provoked. This is simply a branch of the same subject; and though some have told me it was too highly scientific for them to understand, or to think of much practical use to gardeners, let us turn to the Journal of this Meteorological Society to find some experiment that will simplify it till it comes within the range of our comprehension.

Two months since there was a sale of new Orchids advertised, part of which, it was said, were found growing at an elevation of from 12,000 to 16,000 feet on the Cordilleras of Ecuador. What this climate is I do not know, but by the theory "H. S." has given us, if it were anywhere in Europe it would be within the limits of perpetual snow, and, therefore, would have a "mean temperature" low enough to warrant any cool treatment; but in practice it will be found entirely to depend on the dryness or humidity of the atmosphere, as altitude considered apart from latitude makes no difference in the power of the sun's rays, as those who have toiled up a Swiss mountain under a burning sun can have no difficulty in testifying. About 10,000 feet has been the most lengthened of my experiences, and on that day I was made aware that what Mr. Alexander Buchan speaks of as the extra power of the sun in dry and sunny weather was not theory; but I will give the figures that it may be seen what sort of a climate such an Orchid would require had it been found upon the Pic-du-Midi, which is a mountain just upon the 43rd degree of north latitude, and having an elevation of 9439 feet. The comparison is made with Bagnères, a town situated at its foot, the elevation of which is 1808 feet. The first result given is an average of twenty-two observations taken simultaneously at the two places between 7 A.M. and 2 P.M., "in a clear sky, full sun, and calm air." At Bagnères, air in the shade, 72.1°; soil on the surface in the full sun, 97°. On the Pic-du-Midi, air in the shade, 50.2°; soil on the surface in full sun, 92.8°. The second result is the absolute maximum in the sun and the corresponding in the shade. At Bagnères, in the shade, 80.8°; in sun, 122.5°, on the 9th of September, at 2 P.M. On the Pic-du-Midi, in shade, 55.8°; in sun, 126.1°, at 11.30 on September the 10th. To show the rapid manner in which the soil is heated, at 7 A.M. it was only 48.7°, and at 11.30, 118°, on one occasion upon the Pic-du-Midi. The lowest minimum was, at Bagnères, air 58.8°, soil 57°; on the Pic-du-Midi, 34.3°, soil 32.2°—both taken upon the night of September 9th. Such are the vicissitudes of the temperatures of the air and soil during twenty-four hours upon a mountain in the 43rd degree of north latitude, 9439 feet high. What they are at an elevation of from 12,000 to 16,000 feet under the line of the equator I do not know. My intention is not to injure the sale of these Orchids, or to discourage their cultivation, but to point out, as these experiments undoubtedly do, that the power of the sun's rays cannot be judged by "mean temperatures in the shade," any more than the mean night temperature will show how much heat the soil has lost by radiation, as they both depend on the moisture the atmosphere holds in suspension. There are few counties in England that cannot show within the distance of twenty miles two distinct climates caused by one being "much drier and, therefore, sunnier than the other."

"H. S.," from what he says, has lived longer in France than I have, my visits having been limited by the time I could spare from business; but as these visits have been at most periods of the year, I have been able to observe that the spring season in France is not as much earlier in proportion as the summer, and that therefore the reason of the period of maturity of their harvests having gained upon ours at a much greater rate than the difference of the mean temperatures would indicate, is that it is "drier and sunnier," but of the value in figures of this advantage I am ignorant, as I have not found any French meteorological table containing, as those of our two societies do, a column for heat in the sun, and I am this important point short before I can know all the advantages of the climate of Toulouse. M. Ch. Martins's paper supplies me with one item—that on the 9th of September, by the way not the hottest month either, at Bagnères 80.8° in the shade gave 122.5° in the sun, and that town is only six-tenths of a degree south of Toulouse. In June, in London, I have before shown 80° in the shade can give 130° in the sun. If "H. S."

really wants to make a comparison between the day temperatures in a vinery he should give us the mean of all the maxima in the shade, which means the mean of the day temperatures. The mean of all the minima, which means the mean of all the night temperatures, is as interesting but for reasons I am not now considering; but the "mean temperature," which is the mean of these two, is of no value whatever.

"H. S." asks Mr. Thomson the question that if he begins with 100° in the sun for Vines, how he will go on if he is asked to advise temperatures for semi-tropical and tropical plants? I find in the Journal of the French Meteorological Society, some readings taken in Algeria, which I will give. I am sorry that they do not go any further than June 21st. I have taken the forty-eight hours included in the 18th and 19th of June.

June.	Locality.	A.M.	P.M.	Temperature Cent.
18th	Gueltestel	4.30	..	21.5
"	....	5.0	..	24.5
"	Ain Oussera.....	10.55	..	34.5
"	....	12.0	..	35.5
"	....	..	2.0	37.0
"	....	..	4.0	36.0
"	....	..	5.0	34.7
"	....	..	7.15	31.4
19th	....	4.0	..	18.0
"	Boughezoul.....	9	..	30.7
"	....	10.30	..	32.9
"	....	11.30	..	35.8
"	....	..	2.20	37.8
"	....	..	3.30	36.3

If my calculation is correct, 18°, the lowest here given, is equal to 64.60° of Fahrenheit; and 37.8°, the highest, is equal to 100.5°. As, therefore, the Date Palm will not grow north of the Mediterranean, it requires a summer temperature of not less than 65° at night, and 100° in the shade during the day, which, without wishing to anticipate Mr. Thomson's answer, is quite enough for the first step.

M. Ch. Martins, who is the author of this paper giving the results of the experiments he made upon the Pic-du-Midi, says, in his concluding remarks, M. Ramond found on the Faulhourn, which is 8803 feet high, and at its top has only a superficies of 3¾ acres, 131 flowering plants, whereas M. Malingren could only find ninety-three in the whole of the Spitzbergen archipelago. The following is his explanation:—"Independently of their original geographical distribution, the temperature explains to us the number and variety of the species which grow on the summits of the Alps and Pyrenees, because there they are warmed by the soil into which they strike their roots, more than by the air with which their leaves and branches are enveloped, and because the clear lively light prevailing in these high situations is favourable to the functions of respiration; whilst at Spitzbergen, on the other hand, in spite of the continual presence of the sun above the horizon during summer, the heat of the sun's rays, being almost totally absorbed by the great thickness of the atmosphere they traverse, is incapable of raising the temperature of the soil above that of the air." From this, which is the strongest argument I ever read in favour of what we gardeners call bottom heat, to grow Alpine plants and Orchids that have been collected from these high elevations, we must depend more upon soil heat than atmospheric heat for their successful cultivation.

Now for my conclusion. Any one who will read with intelligence all the information I have here gathered, bearing upon the necessity of taking advantage of all these great helps the sun will give us if we let him, and who will then consider how we turn them to advantage in building such lean-to vineries as Mr. Wills has described, where the foliage is trained so as to keep out as much of this valuable source of light and heat will, I think, agree with me that he would not build a lean-to for any purpose whatever.

I noted a few weeks since that the author of "Cordon Training" agreed with what I wrote you last year, that the successful orchard-house must be a lean-to—that is, in his meaning, it must have the advantage of the radiation of the back wall, which is right, so far as it goes; but, why not have as much of this advantage at the top of the wall as the bottom? The only answer is, That by so doing the wind would play upon it, and you would lose heat; but a sheet, such as a simple wall is often supplied with, will stop all this, and if let down at night will prevent the frightful loss of heat by radiation. How many gardeners have seen their crop eaten up by red spider, and the leaves burnt by what they say is the fault of their not being able to keep up moisture enough in the day, notwithstanding all their damping down; but they never think that on clear nights as much damping down is required, though the house receives none. Semi-lean-to houses have an undoubted popularity, and in the hands of most gardeners will, I believe, prove the best, the reason is on account of their negative qualities. I shall prefer the positive advantages, and when I build make large square houses, and by growing the Vines or Peach trees on trellises, enable the sun to pervade the whole house and warm the border in addition.—G. H.

ROSES AND FRUITS AT OKEFORD FITZPAINE.

I HAVE read "D.'s" account of things here. It is tolerably correct, but not quite so. "Everything" in the shape of Roses is *not* cut down to the ground. There are some hundreds of fine plants, from 3 to 4 feet high, in fine health, foliage, and buds. I never had them better. There are some hundreds cut down by the frost, and some hundreds I was obliged to cut down; for, though their skins were perfectly green, their pith was the colour of areca nut. Hence, they broke at their base instead of their summits, which was so unnatural that I was led to examine into the cause, and I found that the frost had injured the pith and wood without defacing the skins. As good wood cannot come out of bad wood, I cut them down; and they, as well as the preceding, are breaking grandly. I have Roses showing colour, and expect a bloom of Maurice Bernardin next week, and to commence generally in about three weeks, or a month, with the unmutilated division. I usually obtain from my Manetti plants three series of flowers—namely, in May and June, in July and August, and in September and October. Briar Roses will rarely give more than two series.

As regards hardiness and endurance, much depends on the nature of the Rose, and also on its health and position in the garden, and still more so on the dryness or wetness of the place. My experience does not agree with that of others as to Roses said to be tender, half hardy, and hardy. In such a winter as the last all required protection, and Teas and Tea-scented Noisettes extra protection. I have lost up to this time twenty-five out of 1200 (one hundred being nothing better than pot plants), and, perhaps, a dozen more may yet go wrong; but all the others are in beautiful condition. It is people's own faults losing so many Roses. They are possessors of Roses rather than rosarians. I do not know six men in this kingdom worthy of the name. I mean hard-working, painstaking rosarians, who try to keep their Roses out of mischief, and know how to extricate them when they get into it. What a pity! for what other class of plants will begin on south walls in May and continue in the open ground in never-ceasing blooming till frost stops them? A rosarian has no business with other flowers. From one to two thousand Roses demand exclusive attention. I have no other flowers here except a few Violets, and a dozen of Stella Pelargoniums. I do not wish to see other flowers superseded, but I wish professed rosarians would work harder to deserve the name, instead of abusing the Roses and the nurserymen who supply them.

I am happy to tell "D.," that my splendid array of Tea-scented Roses are breaking grandly. I think they will be themselves again. I am surprised that anything survived. There are a few bud worms here, but very few aphides, and these are mainly on wall fruit trees, which are syringed every day to preserve their beautiful foliage, which in most gardens is blistered or devoured. Without water we cannot successfully "garden," and without a "will" to use it, the water is of no use.

The Strawberries are in superb bloom. The maiden cordons have set some of their fruit. Bellegarde, Noblesse, Prince of Wales Peaches, and Prince of Wales Nectarine, which are growing nicely. Twenty-eight out of 107 maiden cordons bloomed well, but owing to the violent west wind pushing one of my walls (9 inches thick) out of the perpendicular, I had to take up this spring forty-one of the maiden cordons, and put them in the centre of my garden till the wall was rebuilt. This, of course, stopped them from perfecting their blossoms. Mr. Rivers and Mr. Bréhaut gave me no hope from maiden cordons, but I fancy I shall have some fruit from some of them. The cordons were deprived of their branches, and the fruit is on the main stem. I am trying experiments with them, and if I strike out a spark, I will make it public. None but the rash ever do strike out a new spark.

I am sorry to say that my Plum trees are suffering from

mildew (white) on the under side of the leaves. I hope it is not general. I shall syringe them with vitriol and water, which is my remedy for fungoid diseases. Moreover, it is a capital "tickler" for aphides and red spiders.

It is too early to speak of the Apple crop. I do not think it will be so good as last year. Pears on the Quince stock are a nice crop, but deficient on the Pear stock. Gooseberries and Currants are abundant. I allow seven ducks and two drakes to traverse my gardens. They are the best destroyers of slugs and worms, which attract the blackbirds and thrushes.—W. F. Radclyffe, *Okeford Fitzpaine.*

ROYAL HORTICULTURAL SOCIETY.

Weekly Show, *May 18th.*—Prizes on this occasion were offered for collections of Pelargoniums (Amateurs); Azaleas (Amateurs); miscellaneous plants; cut flowers, arranged in a basket (Open); and for the best exhibition of fruit. In Pelargoniums, Mr. W. Bartlett, Shaftesbury Road, Hammersmith, obtained the first prize; and Mr. A. Wilkie, gardener, Oak Lodge, Addison Road, Kensington, the second. Mr. Wilkie was awarded the first prize for Azaleas. For collection of plants, miscellaneous, Mr. A. Wilkie obtained the first, and Mr. W. Bartlett the second prize. Mr. Morgan, Ball's Park, Hertford, gained the first prize for a collection of cut flowers; Mr. A. Wilkie was second, and Mr. W. Bartlett, third. An extra prize was also awarded Mr. Morgan for a dish of very fine Keens' Seedling Strawberries. Mr. A. Wilkie obtained an extra prize for a miscellaneous collection of plants; also Mr. W. Bartlett for the same. Mr. Morgan exhibited a collection of cut Roses, which, added to a fine collection of Roses in pots from Chiswick, made a very pretty exhibition.

Special Floral Fete, *May 20th.*—It having been announced that Her Majesty would pass through the gardens of the Society after the ceremony of laying the first stone of the Royal Albert Hall of Arts and Sciences, it was determined to hold a special fête on the occasion, and to this several of the leading nurserymen contributed liberally. At the east end of the conservatory Messrs. E. G. Henderson, of Wellington Road, had a small but charming group of Ferns, Tricolor Pelargoniums, &c., edged with a double row of the pretty Silver-leaved Meadow Grass and a triple row of Pyrethrum Golden Feather. Messrs. Veitch exhibited the next group, consisting of Palms, Dracænas, Marantas, Bertolonias, Coleus Veitchii, and other fine-foliaged plants, of which the bold yellow-variegated Sanchezia nobilis variegata was conspicuous as one of the newest and finest. Of flowering plants Messrs. Veitch had fine Saccolabiums, Aërides, Lælia purpurata, and other Orchids, a fine specimen of the brilliant-coloured Anthurium Scherzerianum, Lilium auratum, Amaryllids, Pimeleas, several fine Azaleas, &c. Messrs. Lane & Son, Berkhampstead, had groups of small Rhododendrons and Azaleas in excellent bloom and tastefully arranged; and Mr. Turner, Slough, a large group of Pelargoniums, Calceolarias, Hydrangeas, Heaths, and other flowering plants, along with Alocasias, Marantas, Dracænas, and Ferns, the whole ascending from an edging of Isolepis and Ferns to a wreath of Bougainvillæa at the back. Messrs. Low & Co., Clapton, furnished a similar collection of Cattleya citrina to that which they exhibited on the 7th, but more numerous, comprising no less than 105 specimens, and of many varieties. From Messrs. Lee, Hammersmith, came specimens of Azaleas, Aphelexis, Erica Cavendishii, Cordyline indivisa, Ferns, and other plants with ornamental foliage; and from Mr. Bull a group consisting of Palms, Dracænas, and other fine-foliaged plants, including several of those exhibited a fortnight ago, such as the silvery-veined Fittonia argyroneura, Eranthemum igneum, Echites rubro-venosa, Dichorisandras, Bignonia ornata, &c.; whilst of flowering plants Mr. Bull had Lilium auratum, Cypripediums, and Phalænopsis grandiflora intertwined with Bougainvillæa spectabilis, of which there were also several wreath-like shoots.

In the north-western conservatory arcade Messrs. Bull, F. & A. Smith, Watson, Carter & Co., E. G. Henderson, Downie & Laird, Williams, and Perkins, exhibited fine collections of Tricolor Pelargoniums. Messrs. E. G. Henderson, in addition, to their remarkably fine display of Tricolor Pelargoniums, sent a variety of ornamental-foliaged plants; Mr. Williams sent a similar collection along with some flowering specimens; Messrs. F. & A. Smith, Heaths; Messrs. Ivery, British Ferns. Mr. William Paul contributed one of the most beautiful collections of variegated shrubs we have ever seen, along with a magnificent specimen of the variegated Hydrangea in bloom, and to the beauty of which description would fail to do justice; likewise some beautifully variegated Ivies, Aucubas, Beaton's and other Pelargoniums, as well as several boxes of fine cut blooms of Roses. Mr. Turner, of Slough, sent a stand of Tulip blooms, likewise Pelargoniums, Calceolarias, &c.; Mr. Cunningham, The Forge, Burton-on-Trent, his pretty variegated Ivy-leaved Pelargonium L'Elegante; and Messrs. Paul & Son stands of cut Roses.

Her Majesty, on leaving the site of the new Hall, passed into the conservatory of the Royal Horticultural Society, and through the north-western arcade, and after pausing for a short time to examine the floral display, left the gardens, in which were assembled several thousands of the Fellows and their friends. The Orchids in the bouquet presented to Her Majesty on the occasion, were supplied by Sigismund Rucker, Esq.

Floral Committee and Exhibition of Tricolor Pelargoniums, *May 21st.*—The subjects exhibited on this occasion were so numerous, and the Committee were engaged till so late an hour before their decisions were completed, that we must defer a detailed report till next week, when we shall be able to give a complete list of the certificates awarded. Of the many beautiful collections of Tricolor Pelargoniums exhibited, it is scarcely possible to speak too highly. The varieties of which they were composed were almost innumerable, still the number of those showing a well-marked difference from others was not so great as might be supposed. Messrs. E. G. Henderson contributed several beautiful collections. One comprised fine specimens of Lucy Grieve, with a very bright zone; Sophia Casack, Lady Cullum, Sophia Dumaresque, Sunset, and Italia Unita. Sunshine, having a yellow edge and a very showy flamed deep crimson zone, was awarded a first-class certificate; and in the same collection was Stella sulphurea marginata, the leaves broadly edged with yellow, and of course without tricolor markings. From the same firm came also a collection of miniature Tricolors, both golden and silver-edged, most of them not exceeding 4 inches in height, and consisting of Golden Pet, The Bride, Jenny Wren, The Fairy, Queen's Favourite, Little Dear, Little Pet, Minnie, Tom Tit, Little Harry, and one or two others. Several of these were very pleasing from their dwarf growth, and seemed well adapted for edgings. Messrs. Henderson also sent a number of seedlings between the Golden-bronze zone and Tricolor sections; seedlings of 1866, showing the entire green leaves of the first growth breaking into a variegated form; others which for various causes had been found defective, as well as a number of other illustrations showing the progress of varieties. Mr. Bull had also a very fine collection of new sorts raised by Mr. Wills, and having variously-coloured zones. Of these Beauty of Ribblesdale was very conspicuous. It has very large leaves, with a showy, broad, reddish bronze zone on a yellow ground. This fine variety received a first-class certificate, as did Her Majesty, a compact-growing kind of a similar character. We also noticed Beauty of Caulderdale, a bold-leaved variety of the same class; and of Tricolors Florence, Lizzie, and Unique. Mr. Wills laboured under some disadvantage in having cut for propagation some of his best varieties before the Show was determined on, but the exhibition was very creditable to his skill as a raiser. Messrs. Garaway & Co., of Bristol, had a number of good varieties, bronze-leaved and Tricolor; of the latter Mrs. Allen received a first-class certificate. It has nearly circular leaves with a narrow golden edge, and a regular crimson zone, very bright in the young foliage. From Messrs. Carter and Co. came a collection of seedlings, several of which were very remarkable in character, and it was only the circumstance of their being seedlings that prevented some notice being taken of them. One shown as No. 195 on the previous day, and afterwards named Prince of Wales, had leaves 5 inches across, with a broad yellow edge and a very broad red zone. If it maintain its character when propagated it will be a great acquisition.

Mr. Grieve had a very fine collection, the star of which was the variety called Victoria Regina. This beautifully-marked variety deservedly received a first-class certificate. Minnie Warren, with a broad white edge, was also very pretty; and Mrs. Turner, with a dark green edge, a broad bronze zone, and a light green centre, was very distinct. Messrs. F. & A. Smith had a large and fine collection, and received several certificates; and other numerous collections came from Mr. J. J. Chater, Gonville Nurseries, Cambridge; Messrs. Windebank & Kingsbury, Southampton; Maule & Son; and Saltmarsh, of Chelmsford, the latter receiving a first-class certificate for Sunrise, a compact-growing Tricolor. Mr. W. Paul, Messrs. Downie and Co., Hally, Aldred, of Kilburn; Perkins, of Coventry; Laughois, of St. Helier's; Watson, St. Albans, and others, also exhibited Tricolor varieties though less numerously.

Messrs. Veitch exhibited a fine collection of new plants of which Dichorisandra mosaica, Dracæna regina, a new Adiantum, Retinospora filifera, and Maranta illustris, received first-class certificates; and Dichorisandra undata one of the second class. Mr. Bull, who had also a good collection, received first-class certificates for Anthurium regale, Dichorisandra mosaica, and the handsome spreading Zamia villosa, and a second-class certificate for Dichorisandra undata. For a pretty Golden Elm, from Mr. W. Paul and Messrs. E. G. Henderson, a first-class certificate was awarded to both. W. W. Buller, Esq., received a special certificate for fine examples of Lælia purpurata, and several other Orchids were shown, notably a collection of Cattleya citrina, by Messrs. Low, of Clapton. Many other subjects were shown and received certificates, but we must defer noticing these till next week.

Fruit Committee.—Rev. George Kemp in the chair. Prizes were offered for the following subjects:—1, The best three dishes of dessert Apples. In this class there were three exhibitors—Mr. Lynn, gardener to Lord Boston; Mr. Whiting, of the Deepdene; and Mr. Cox, of Redleaf. Mr. Lynn and Mr. Cox each showed two collections. The first prize was awarded to Mr. Whiting for Adams' Pearmain, Mickleham Pearmain, and a variety not named, but which was similar to Federal Pearmain. Mr. Lynn was second with Scarlet Nonpareil, Golden Knob, and Cockle Pippin. Mr. Curd, gardener at Sulhampstead House, Berks, obtained a first prize for three dishes of Straw-

berries. They were fine fruit and in good condition, consisting of Reeves' Eclipse, Marguerite, and Sir Harry. For the best dish of Cherries, Mr. Lynn took a second prize with Frogmore Early; and Mr. Tegg was awarded a first prize for a splendid dish of Bellegarde Peaches, from the Duke of Newcastle's garden at Clumber. Mr. Pearson, of Chilwell, exhibited a dish of Walnuts that had been kept in fine condition by Mrs. Hetley, of Orton, near Peterborough, for two years and five months, to which a special certificate was awarded. The method adopted is to allow the nuts to fall naturally from the tree, then dry them in the sun and wind, and afterwards to hang them in bags in an attic. Mr. Cox, of Redleaf, also received a special certificate for a collection of six kitchen Apples kept in fine condition. Mr. Short, gardener to Lord Eversley, Heckfield, sent fruit of the curious Cerasus pseudo-cerasus. It is a small Cherry of a pale amber colour, with a hooked beak at the apex, and in some instances grows in pairs on one stalk, like the Cluster Cherry and Bigarreau Legrey. The flavour is flat and insipid. Mr. Shortt also specimens of young Pears, showing how much the crop this season is infested with grubs, and from this cause it may be anticipated that the Pear crop will suffer much.

General Meeting.—W. Wilson Saunders, Esq., F.R.S., in the chair. The proceedings of this meeting were of unusual interest, and the Council-room was densely crowded.

After the election of seventeen new Fellows, and the admission of the Wolverhampton Horticultural Society into union, the Rev. M. J. Berkeley remarked that as the meeting was chiefly devoted to Tricolor Pelargoniums, it would be most instructive to call attention to the principle on which their colouring depends. The original species from which they were all derived was the old Cape Pelargonium zonale, of which he produced a specimen, and of which the leaves are only slightly zoned. The first improvement on this was Fothergillii, which was not imported but a seedling, and from that improvement all the fine varieties around him had sprung. Mr. Berkeley then remarked, that variegation really is a disease; in fact, in the vegetable kingdom everything not normal in structure is a disease, giving as examples Kohl Rabi, the useful portion of which results from an obstruction in the stem; Radishes, &c. Celery when blanched was also in a diseased state, so were the fine varieties of Roses and Tulips. Mr. Berkeley then exhibited diagrams showing the structure of the leaf of one of the best brown-zoned Pelargoniums. On the upper surface was a thin layer of cuticle, next to this a layer of cells containing no colouring matter, then cells of chlorophyll, but sometimes instead of being green the cells of the zone were filled with red colouring matter, and in proportion to the number of red and green cells, so was the character of the leaf. The brown colour of the zone depended on the green colour of the subjacent cells shewing through the red and giving an olivaceous tint; and in the Tricolor varieties if the variegation was yellow, the yellow cells shining through the red produced a flame colour. Beautiful, however, as were the plants exhibited, it might safely be concluded that perfection had not yet been attained, and he held up as a model a drawing of a leaf exhibiting distinct zones of yellow, red, and green, without radiation.

The Rev. Joshua Dix congratulated the meeting on the success of the Exhibition, the idea of holding which had first originated with Major Clarke, and it was warmly taken up by the Council. The Floral Committee had had great difficulty in performing their task, owing to the great similarity of the varieties, and had, in fact, not completed their awards when the meeting commenced. He might mention, as the Committee could give no certificate to yearlings, because such could not be depended on, many exhibitors would be disappointed, who had brought most exquisite plants, with which no fault whatever could otherwise be found.

The Chairman then called upon Major Clarke.

Major R. Trevor Clarke said, that when he had put together a few notes on the general phenomena of variegation in plants, he was not aware that the subject would be taken up by Mr. Berkeley; but as his own views previous to the meeting were somewhat different, he would state them. Major Clarke then said:—"Few who have been accustomed to roam about with observant eye through copse and dell, or by lake and river, in the sweet spring time, can have failed to notice the frequent occurrence of variegation in wild trees, shrubs, and plants. Whatever the nature of it may be, it is certainly not a special effect of cultivation. What is it, then?—a morbid state, as proposed by some? I think hardly so. Although in some cases accompanied by constriction of the leaf and tenderness of constitution, these conditions are by no means necessarily concomitant. Not a few plants in the variegated state are healthy and vigorous. The beautiful gold or silver Holly sprig with its coral berries that decks our homes at Christmas tide, was gathered from a strong and healthy tree, as strong and healthy as those plainly clad in homely green. They do say the berries won't grow, but that we may have to discuss by-and-by. Again, the Sycamore, with its leaves striped with silver, or flecked and dusted with gold, is a lofty, vigorous, and healthy tree.

"Gardeners have but little to say against the general good constitution of our beautiful queen of the May, Mrs. Pollock. She is of fair and noble presence, and, like another Monarch in our land, has given birth to a fair, noble, and numerous offspring. Mrs. Pollock still lives in the hearts of our gardeners as our own dear Queen lives in the hearts of her people (applause). Say, then, is this strange and certainly beautiful manifestation a healthy but rarely occurring natural phenomenon? It is not a normal one, for there is in such plants a constant tendency to recur to another form which is more frequent than itself. Gardeners call it a sport, translating unconsciously the *lusus naturæ* of the old Latinists. It certainly appears more frequently as a bud-formation than as a seed-change. Poor Dr. Lindley used to say that a bud and a seed were pretty much the same thing; the main difference is, that in the case of reproduction by seed, like never, strictly speaking, produces like. I once made a very curious observation bearing upon this subject. A half-variegated or magpie seedling Pelargonium grew into a plant, and in this plant I traced the unmingled lines of green and white from stem to branch, from branch to flower-stalk, and thence to the seed-vessel, which enclosed a particoloured seed. That seed again produced a pied offspring, of which one cotyledon was white and the other green. When a pure green line in this case passed up into the seed-vessel the seed was green, and so was the seedling. A white stripe, or line, ruled in like manner the destiny of a pure white offspring. These latter never developed a second or true leaf pair. Seedlings with golden seed-leaves, however, produce perfect plants.

"Perhaps we should not be far wrong in considering variegation, at any rate symmetrical variegation, as an occasional natural state, and to class it with other unusual developments—as laciniations in entire-leaved plants, red or yellow twigs where plain brown should be the rule, the abnormally rampant shoot lately observed on the Devonian Tea Rose, and the pigmy Clanbrazilianised branch occasionally seen mimicking a rook's nest high on the lofty Norway Spruce tree. I will not take up your time in multiplying instances, but hope that I have sufficiently explained myself on this point.

"Closely connected with variegation, or the partial absence of chlorophyll from the leaf, is the occurrence of striped or pure white flowers upon red, blue, or otherwise coloured plants. I find that the colouring matter, if white may be called a colouring matter (and in this case it is), is identical in both cases. It is probably the fact that both in white flowers and variegated leaves there exist yellow cells, which become more apparent when the tissue is treated with an alkali. I believe the colouring matter is what chemists call luteoline. For fear of wandering into another and still more interesting subject—that of the colouring matter of flowers and plants in general, I will not now allow myself to soar into the regions of chemistry; I will merely remark that this subject has been partially investigated by several distinguished French chemists, and that I hope I may live to tell you some day what little glimpses they gained from their peep into Nature's wondrous laboratory.

"I regret extremely that circumstances have prevented me from contributing more practically, I mean in the way of plants and so on, to this most interesting Exhibition, and that for the same reason I have not been able to put together a more detailed scientific note or collection of facts on the subject. I have scarcely attempted this, my mission to-day being principally to place before you a subject upon which I understand several of my brother gardeners are prepared to give some valuable and interesting information. How well they have responded to our invitation to ventilate this subject I need not say. We reckoned upon a respectable few enthusiastic exhibitors with a few choice plants, but they have come upon us like an army, even like the Byronic Assyrian, "their banners are gleaming with purple and gold." On entering the room this morning I found Judges and Committee in a state difficult to describe, in a perfect *embarras de richesse*. It had evidently been raining Golden Pheasants and Golden Fleeces. Poor Mr. Dix stood there looking like—like—Danäe in a golden shower of Mrs. Pollocks."

Major Clarke then introduced to the Meeting Mr. Grieve, as one of the gentleman who had offered to read a paper.

Mr. Grieve, after expressing his gratification that the Tricolored class of Pelargoniums had been considered of sufficient importance to form the subject of a special exhibition, said that as his efforts had, he believed, been admitted to have been in some degree instrumental in the production of that beautiful race of ornamental plants, and as discussion and information on the subject was invited, it would not, he hoped, be considered presumptuous to offer a few remarks on their history.

The cause, or causes, of variegation in the leaves of plants, including, of course, the Pelargonium, were as yet, he believed, unknown, consequently no means could be successfully used to produce it; but when from some unknown cause it spontaneously developed itself in an individual plant, then, in accordance with the law or doctrine of hereditary transmission of qualities, little difficulty was experienced in inducing it to reproduce itself in succeeding generations. The chemical or other changes, however, which must take place in a plant to induce its foliage to become variegated, present, undoubtedly, a very interesting subject for inquiry, and were worthy, it might be supposed, of the attention of the vegetable physiologist. He had at different times consulted various authorities upon this subject without, however, being much enlightened thereby. Dr. Hope says that there is in plants a colourable principle, consisting of two separate parts, one of which forms a red compound with acids, while the other forms a yellow with alkalies; and he attributes the green colour, produced by the latter, to the mixture of the yellow matter with the blue infusion. The two principles, according to him, may exist together or separate in different parts of the same plant. Dr. Balfour also says,

"The whitish or brown spots which occur on the leaves are often produced by thickened cells, containing peculiar colouring matter, underlying the chlorophyll cells. In such cases variegation might be traced to an alteration in the epidermal cells, and the same is true of certain bright colours assumed by the surface of some leaves."

With regard to the leaf of the Tricolored Pelargonium, Mr. Grieve said he had sometimes been inclined to think that the zone undergoes no change whatever when the leaf becomes variegated, or yellow margined; and notwithstanding the fact of red being one of the primary colours, consequently, according to theory, cannot be produced by any combination of colours; but covering, as the zone does, the junction of the yellow margin with the green disc, or centre of the leaf, we find that whatever part of the zone rests upon the yellow appears bright red, while the portion which may rest upon the green part of the leaf retains its normal or brown colour. The question, then, is, How is this red colour produced? For his own part, he too hastily jumped at the conclusion that the brown and yellow had produced the red; but this, according to the theory of colour, could not have been the case. So he had to leave the settlement of this interesting question to those whose scientific knowledge would qualify them for the task.

Before proceeding to furnish what little information he could as to the history of the Tricolored Pelargoniums, he might notice a defect incidental to the Silver-tricolored section, but without being able, he was sorry to say, to suggest a remedy. He alluded to the cupping, or crumpling of the foliage, more particularly when the varieties are cultivated in the open air, and if the weather is at all cold and wet. This crumpling appeared to be caused by the fact of the white or colourless margins being unable to expand in proportion to the growth of the green or central part of the leaf, consequently cupping or crumpling was inevitable; and very possibly this deficiency of expansive power in the white margins of the leaves might be attributed to the nearly entire absence of chlorophyll or green colouring matter; and that this defect does not in any way apply to the yellow-margined varieties might be accounted for by the fact that their yellow margins are not entirely destitute of this principle.

Some twenty years ago there were, he believed, but few varieties of variegated Pelargoniums in existence. Of these, the two best fitted for the purpose of bedding or massing in the flower garden, were a sort known as Variegated Nosegay, and another called Mangles's Variegated Nosegay. Of the origin of the first-named he knew nothing; of the latter he had heard that it was obtained by the late Captain Mangles as a sport from a green-leaved variety. This sport is well adapted for the purpose of bedding, and still, he believed, extensively used in that way. The two varieties named above were both silver-margined sorts, with nosegay or very narrow-petalled flowers. The only golden-margined sort of any merit at that time was the variety known as Golden Chain, and of its origin he was also quite ignorant; but he had been informed by an old gardener that he recollected having grown it along with a collection of stove plants nearly fifty years ago. About seventeen or eighteen years since the horticultural world was somewhat startled by the announcement of a scarlet Pelargonium, having broad-petalled flowers and variegated foliage. This proved to be the celebrated and now well-known variety called Flower of the Day, and he believed that it was to Mr. Kinghorn that we were indebted for the introduction of this forerunner of a highly ornamental race of plants. This variety was soon followed by others of increased merit, the production of more than one successful raiser, among which the names of Lennox, Elphinstone, &c., deserved to be mentioned. Amongst these new introductions the beauty of several varieties was greatly enhanced by having, in addition to their silver margins, a red or pink zone, well defined and exceedingly beautiful when the leaves were in the early stages of their development. These varieties, combining as they certainly did, three distinct colours in their foliage, might with propriety be designated as the forerunners of the Silver-tricolored race, and to Mr. Kinghorn he believed belonged the credit of having originated the first of them, named, he thought Attraction.

About the year 1855 or 1856, he (Mr. Grieve) had succeeded in originating several varieties which were considered as advances on their predecessors, the best of which, however, was the variety named Italia Unita, which in its class is, perhaps, unsurpassed; and about the time stated above it occurred to him that similar improvement might possibly be effected in the golden-margined varieties, which at that time consisted of only Golden Chain and one or two other sorts inferior to the sort named. But at all events he confined his experiments to Golden Chain, and after trying many experiments, many of them resulting in failures, he at last succeeded in originating two varieties which were considered as worthy of being distributed under the names of Golden Tom Thumb and Golden Cerise Unique. These were succeeded by Gold Pheasant, which was also in its turn eclipsed by the variety known by the name of Sunset, and in the following year he succeeded in raising the now well-known variety Mrs. Pollock, which was succeeded by Mrs. Benyon, Lucy Grieve, and lastly, Lady Cullum, now being distributed by the Messrs. Henderson, and about which variety it was quite unnecessary to say that it would be sure to prove a public favourite. The great desideratum in a variegated Pelargonium, said Mr. Grieve, is a vigorous constitution, and, consequently the power of rapid increase by cuttings; and this quality is possessed in an eminent degree by the variety referred to, and in a still greater degree by that which he had named Queen Victoria, and which he considered to be in all respects the best he had ever raised. On that account he took the liberty of giving to it the name of Her Gracious Majesty; but since doing so he had found that he had been forestalled, as the name had been already assigned to another variety, but he would still adhere to the name in the slightly altered form of Victoria Regina.

Soon after the introduction of Mrs. Pollock, the attention of other cross-breeders appeared to have been directed to this subject, and the consequence was, that the name of Tricolored Pelargoniums might now be said to be Legion, and growers had ample opportunities of selecting and adding to their collections varieties of the greatest merit, including, of course, habit of growth, quality of bloom, &c. In the gardening journals he had recently given the pedigree of Mrs. Pollock, so that it would be unnecessary to repeat it, but he might briefly state that the Golden-tricolor Pelargoniums which he had originated had all descended from the well-known Golden Chain.

He had also at various times tried experiments with Mangles's Variegated Nosegay, without having been very successful. It was a sort which did not produce pollen freely, nor did it seed freely when fertilised by the pollen of other varieties, and even when it does appear to ripen seeds they very frequently refuse to grow. He had, however, succeeded in raising a few seedlings from it, and one of them was known as Stella Variegata, and was produced between a seedling Nosegay variety (raised from a very strong growing sort known as Mrs. Vernon), and Mangles's Variegated Nosegay. This variety (Stella Variegata), greatly resembled sports which had at different times, and in various localities, been obtained from Beaton's Stella, although their origin as he had endeavoured to show, was entirely distinct, and their flowers of a different shade of colour. Last year, Mr. Grieve remarked, he had fertilised blooms of a small-leaved seedling Nosegay sort with well-defined zones, and which has been named Blackbird, with pollen taken from Stella Variegata, and one of the results is the Minimum variety with very white leaf margins, named Minnie Warren.

Some years since, on the introduction of some of the better sorts of the white-flowered Zonal varieties—such as Madame Vaucher, White Tom Thumb, &c., all the kinds having well-defined zones, it occurred to him that if sorts with foliage similar to Mrs. Pollock, Lucy Grieve, &c., could be induced to produce pure white flowers, it would be a very desirable acquisition, and he immediately set about experimenting in the matter, but found the process to be much slower than he had at first calculated upon. It would be tedious to describe all his experiments and failures, but in four generations he succeeded in producing plants having golden-tricolored foliage, and also producing pure white flowers, unfortunately, however, accompanied by an exceedingly feeble constitution, and apparently a strong determination to leave this world as soon as they conveniently could, and which most of them succeeded in doing. Still he managed to persuade a few of them to live; and one of them before the meeting was named The Ghost, as it was only the ghost of what he wished it to be. But the first two points had been gained—viz., tricolored foliage and white flowers, and the third point only was wanting—namely, vigour of constitution; the first step towards that point was, he believed, successfully taken, the proof of which was the variety named Eva Fish.

Two principles, it would be observed, had been active in tending to enfeeble or debilitate the constitutions of the white-flowered and Golden-Tricolor race; these were variegation itself, which always tends to diminish the vigour of any variety, and also what is called the "in and-in" system of breeding, which is known to have a similar effect in the vegetable as well as in the animal kingdom; and the method he had adopted to throw fresh blood, as it were, into the race was as follows, and, as far as he could judge, he thought it likely to prove successful:—He selected one or two strong-growing silver-margined seedlings having very light pink or nearly white flowers. These he fertilised with pollen taken from Madame Vaucher, White Tom Thumb, and some other green-leaved, white-flowering sorts. Most of the progeny proved green-leaved, a few, however, showed variegation, but he selected a few of those which showed no symptoms of variegation whatever, and when they bloomed they nearly all proved to have white flowers, and these he fertilised with pollen taken from the variety named The Ghost. The results of this cross were the plant named Eva Fish, and one or two other promising seedlings, which he had little doubt would produce white flowers.

It would appear, continued Mr. Grieve, that because the hand of science has not directed such experiments as he had endeavoured to record above, scientific men hardly feel inclined to assign to the rough-and-ready cross-breeder the amount of credit which he may possibly consider as due to his exertions. Professor Morren, in treating upon this subject, says that the cause that operates in the production of such varieties as Mrs. Pollock, Sunset, &c., is a multiple or complex one, and draws attention to the apparent diversity of the origin of such plants, and to the simultaneous appearance of similar forms in different localities in England, in France, and in Belgium. Now, all this Mr. Grieve said he believed to be incorrect, and an instance of conclusions being arrived at without trouble having previously been taken to ascertain facts. He believed, in common with most growers and raisers of these plants, that no Golden-tricolored Pelargonium deserving of the name existed antecedent to Mrs. Pollock and Sunset, and if any similar varieties originated simultaneously either in this country or on the continent, where were they to be found? or what had become of them? M. Morren further said, "These varieties

are not the result more or less directly of man's agency, nor of this or that operation of the cultivator, but they are the indirect but inevitable natural and spontaneous consequences of the mode of development belonging to the species when grown under artificial circumstances, &c." Possibly we may be told some day that St. Paul's Cathedral was a spontaneous production, independent of man's agency, &c., and some, perhaps, might be found to believe it. For his own part he believed that the Pelargonium is grown at present under much the same artificial circumstances as it was grown a hundred, or possibly two hundred years ago; and our great grandfathers might have enjoyed the luxury of bedding-out Tricolored Pelargoniums in the summer of 1767 in every way the same as their descendants were doing at the present time, had their tastes led them in that direction, and if the idea had occurred to them to use the means at their command. As he had said before, he believed that the cause of variegation was unknown, and consequently could not be produced, and the cross-breeder does not for a moment presume to say that he can control Nature. All that he can do is to watch her closely, and when he perceives her in the least degree inclined to tread the path he wishes her to pursue, he can, as it were, smooth that path, and render it as inviting as possible. He may perhaps even go a little further, and, policeman-like, touch her gently on the shoulder, and respectfully request her to move on. More than this he cannot do, for what the poet has said with regard to Nature's fairest production will also apply to Nature herself:—

"For if she will, she will, you may depend on 't;
And if she won't, she won't, so there 's an end on 't."

Mr. Grieve said in conclusion, that although the pedigree of the Pelargonium Mrs. Pollock had been made public, he would again briefly state it. The seed parent of Mrs. Pollock was Emperor of the French, and the pollen parent Gold Pheasant. The seed parent of Gold Pheasant was also Emperor of the French, and the pollen parent Golden Tom Thumb. The seed parent of Golden Tom Thumb was Cottage Maid, and the pollen parent Golden Chain. As to the parentage of some of his seedlings of the present and last years, He was unable to give any information, as in most instances both parents were themselves seedlings, and many of them had not been preserved.

The Chairman having thanked Mr. Grieve in the name of the Meeting, Mr. Wills gave some illustrations of the manner in which sports of variegated Pelargoniums become fixed, and said that although he intended to have read a paper on the origin of variegated Pelargoniums, as Mr. Grieve had touched on many of the same points he would not occupy time by reading it, but he would communicate it to the Society. Mr. Chater then stated at some length his views as to the causes of coloration in Pelargonium leaves, and differed from Mr. Berkeley in considering that variegation is not a disease.

Mr. Bateman next made some observations on the Orchids. He had heard it often remarked that these occupy too much attention at the Tuesday meetings; but his friends, Mr. Dix and Major Clarke, had on this occasion had a magnificent revenge, for he was quite overwhelmed by a golden shower. Directing attention to Cattleya citrina, of which Messrs. Low exhibited a large collection, he said that the tendency of the plant is always to grow downwards, and pointed out the singularity of the pseudo-bulbs, which are as if wrapped up in silver paper. The plant lasts a long time in flower, and he never saw a more remarkable sight than a regiment of it, nearly a thousand strong, at Messrs. Low's. It was an Orchid succeeding with very cool culture, and would do in a warm greenhouse. Cypripedium candatum, from Mr. Bull, with tail-like appendages nearly 2 feet long, next occupied attention; but all Cypripediums, he thought, must yield in beauty to C. lævigatum, which was also exhibited. Dendrobium MacCarthiæ was also shown for the third time; it was now arriving at its full maturity, and Mr. Wentworth Buller had informed him he had seen specimens of it with as many as twelve spikes of flowers, and very few Dendrobiums, indeed Orchids, would be able to compete with it. Mr. Bateman said he had next to notice a little gem—namely, Oncidium nubigenum, so called from its living almost in the clouds, for it was found in Ecuador, at an altitude of 12-14,000 feet—a greater elevation than ever attained by any cool Orchid. It had gone under the names of O. Dennisonianum and O. Phalænopsis; but Reichenbach had proved that the plants to which these names had been applied were nothing but the O. nubigenum of Lindley, for which O. cucullatum had been mistaken. The beautiful group of Lælia purpurata, and the wreaths of Bougainvillæa spectabilis, shown by Mr. Bull, were then noticed, and with reference to the latter, it was remarked that beautiful as they were, they were nothing in comparison to the plant as grown at Cliveden.

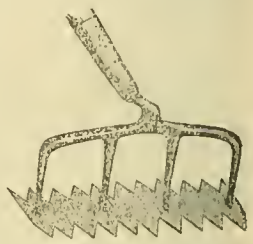
Mr. Bateman then announced that Mr. Anderson, of Meadow Bank, near Glasgow, was the successful competitor for the prize offered for the best list of Orchids arranged according to climate (see page 344), and that Mr. Wentworth Buller was second. After mentioning a Sarcopodium which was said to exist in New Guinea as a plant which it would be desirable to introduce on account of the size of its flowers, which are said to be 8 inches in diameter, attention was next directed to the Japan Flax, sold by Mr. Alison, and which whilst resembling bass matting is much stronger. Mr. Bateman considered it much superior to matting for tying purposes, and it might also be employed as a textile fibre, as exemplified by handkerchiefs made of it. Mr. Bateman concluded by announcing that the subscription to erect a memorial to the late Mr. Skinner had produced a considerable sum, which would be stated at the next meeting, by which time the subscription list would be closed.

Major Clarke said that Mr. Bateman had no right to complain that Orchids had been treated coolly, for he was always advocating that very treatment (laughter).

Mr. Wilson Saunders said that the use of the term Tricolor Pelargoniums was botanically incorrect, and exhibited a plant of Pelargonium tricolor to which alone the name should apply. Versicolor or parti-coloured Pelargoniums would be a better name; indeed the best of the so-called Tricolors exhibited not three but four colours.

SCUFFLE-HOE.

Mr. George P. Allen, of Woodbury, Connecticut, is the inventor and patentee of this little implement. It is a scuffle-hoe, consisting of a thin steel blade, with two cutting edges, which consist of a series of acute teeth, sharpened from the under side. Held naturally, by a man standing erect, the blade lies perfectly flat upon the ground, and raising or lowering the handle gives it a tendency to enter, if shoved or drawn. The common straight-bladed scuffle-hoe, though sharp, often meets with considerable resistance from roots of grass and weeds, and frequently slips over them; even hard lumps of soil obstruct its movement. This hoe readily passes through the clods, and cuts any kind of roots with ease. It is especially adapted to hoeing among garden vegetables, Carrots, Onions, and roots in the field.—(*American Agriculturist.*)



PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

Dalechampia Roezliana (Roezl's Dalechampia).—*Nat. ord.*, Euphorbiaceæ. *Linn.*, Monœcia Polyandria. Native of Vera Cruz. Introduced by M. Van Houtte, of Ghent. A superb shrub above 3 feet high, involucral bracts brilliant rose colour. Flowers yellow.—(*Bot. Mag.*, *t.* 5640.)

Agave schidigera (Splintered-leaved American Aloe).—*Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia. Introduced from Mexico by M. Van Houtte, of Ghent. Remarkable for the broad white filaments given off from the margins of the leaves. Flower scape about 6 feet high. Flowers yellow.—(*Ibid.*, *t.* 5641.)

Gomphia Theophrasta (Theophrasta-like Gomphia).—*Nat. ord.*, Ochnaceæ. *Linn.*, Decandria Monogynia. Native of South America, probably the low-lying districts of Brazil. Flowers yellow.—(*Ibid.*, *t.* 5642.)

Epidendrum eburneum (Ivory-flowered Epidendrum).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Diandria. Native of swamps near Panama. Its stem having bright green leaves contrasts well with the ivory white flowers.—(*Ibid.*, *t.* 5643.)

Myrtus Cheken (Chequen of Chili).—*Nat. ord.*, Myrtaceæ. *Linn.*, Polyandria Monogynia. Flowers white. "This is one of those pretty evergreen Chilian plants, so suitable for walls in all the milder parts of England, and for greenhouse decoration everywhere, but which is apt to be cut by a winter's cold below the average, and burnt by a long summer's drought, on the eastern side of the kingdom."—(*Ibid.*, *t.* 5644.)

Fittonia argyroneura (Silvery-nerved Fittonia).—*Nat. ord.*, Acanthaceæ. *Linn.*, Diandria Monogynia. A most beautiful plant; leaves dark green; veins white.—(*Flore de Serres*, 1664.)

Hydrangea paniculata *var.* grandiflora (Large-flowered Panicled Hydrangea).—*Nat. ord.*, Saxifragaceæ. *Linn.*, Decandria Digynia. Introduced from Japan. Flowers snow white.—(*Ibid.*, 1665.)

Griffinia hyacinthina maxima (Largest violet-coloured Griffinia).—*Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia. Segments of corolla white, blue margins.—(*Ibid.*, 1667.)

Sedum maximum versicolor (Various-coloured Largest Sedum).—*Nat. ord.*, Crassulaceæ. *Linn.*, Decandria Pentagynia. Leaves green, variously marbled with yellow and pink, with an edging of the last-named colour.—(*Ibid.*, 1669.)

Gesnera.—Varieties, *Chromatella*, yellow; *Cymosa*, white and pink; *Lindleyana*, yellow and pink; *Rosea punctatissima*, yellow and spotted with pink.—(*Ibid.*, 1671.)

Zea Japonica foliis albo-vittatis (Japan Maize with white-striped leaves).—The leaves are both striped and spotted with white.—(*Ibid.*, 1673.)

Maranta roseo-picta (Rose-variegated Maranta). — Leaves with a rose-colonred band round each a short space from their edge, and pink-nerved; under surface purplish red.—(*Ibid.*, 1675.)

Pear Princess of Wales. — See Journal of Horticulture, vol. xii., page 88, n.s.—(*Florist and Pomologist.*)

CAMELLIA CULTURE.

Mr. W. Paul is nnder quite a wrong impression if he thinks it was with an eye to bnsiness I criticised his remarks on Camellias. They are no speciality of mine. One house is all I devote to their culture, and this for the sake of blooms more than with any other object. Those who have read my papers will hardly think interested motives have dictated their composition, the greater number of them being on subjects of no pecuniary interest to me. I question if Mr. Paul is older than I am, and must say I hope he does not intend to convey the impression that when he waa a boy he graw Camellias in green turf and found it fail, or that it was the old and general mode of culture. It is all very well to talk of not "depreciating the honest efforts of any fellow-labourer, however humble," but when a man takes the stand of a teacher on any subject, I think he should be prepared not only to find others differ from him in opinion, but to be asked questiona and have to reply to them. Few are in the position to speak *ex cathedrâ* on any subject, and it is better to answer with cogent arguments than ungenerous insinuations. "Dark Laurel-like bushes are not what the public want, particularly if large enough to hide a bullock." Perhaps not; at any rate the public seldom obtain them. I once sent to the gardener at Wollaton for a few blooms of white Camellias for a ladies' party, and he sent me a large clothea-basket full, "the dark Laurel-like bushes" being then almost covered with blooms.

I certainly am disappointed in Mr. Paul. I thought I ran a good risk of having my objections answered in a way which would make me appear quite in the wrong, and that I should have had to solace myself with the fact that at any rate the public were the gainers. I took up my pen

> "With the stern joy which warriors feel
> In foemen worthy of their steel,"

and instead of being set right and having explained to me what "loamy peat" is, I am told, or rather the public is, that Mr. Paul haa some thousands of Camelliaa to sell, grown according to his rulea, and that the first prize for Camellias was awarded to him by the Royal Horticultural Society. He does not say if these thousands of Camellias were propagated and grown by himself or by his foreign pupils, only that they have been grown according to his rules.

Though I have been a member of the Royal Horticultural Society some years, I never heard of the Camellia Show. I did hear of a few middling cut flowers being exhibited, which took a prize for want of competition. Surely these are not the kind of prizes of which a mao like Mr. Paul ought to ha proud. If I had grown such Roses in pota as he has exhibited, I should consider myself an authority in Rose-growing, and should he ashamed to talk of a few cut blooms of Camellias.—J. R. Pearson.

Birmingham Rose Show.—On reference to our advertising columns it will be seen that the sixth annual Show will be held in the Town Hall, Birmingham, on Thursday and Friday, July 4th and 5th. The prize list will be ready for circulation in a few days, having undergone a very careful revision at the hands of the Committee. Several features of interest have been added, of which we may particularise a class for eighteen varieties of Tea-scented, Noisette, and China Roses; another for twelve varieties of Summer Roses, including Provence Roses, (not Moss), Gallica, Hybrid China, Hybrid Bourbon, Alba, and Damask Roses; a class for amateurs who have not previously won a prize for Roses; and some useful modificationa with regard to Moss Roses. Hitherto there has been but one class for baskets of Roses, and for designs. These are now separated. Seedling Roses, new plants, seedling plants, and novel and effective methods of exhibiting cut Roses are invited, and certificates of merit will be given where deserved.

NOTES AND GLEANINGS.

It is true, though not generally known, that many of our most grateful perfumes are now produced artificially, and, what will strike most of our readers as approaching the incredible, these artificial perfumes are obtained by the chemist's art from some of the most offensive of organic remains. We believe that even the most valuable of vegetable perfumes, attar of Roses, will be eventually prepared artificially, for it is really only olefiant gas rendered solid at common temperatures. This is apparent if we place the tables of their chemical composition side by side.

	Attar of Roses.	Olefiant Gas.
Carbon	86.743	85.71
Hydrogen	14.889	14.29

Olefiant gas is the most valuable constitnent of the coal gas which illnmines our streets and houses. When pnre it is nearly scentless, but if mixed with a little chlorine gas it becomes a heavy oil, and acquires a sweet ethereal odour. Some other addition one of these days will impart to it the odour of the Rose. We were led to these thoughts by the following note on the extraction in Turkey of the attar from the cultivated Roses:—

"Mr. Blunt, the British Vice-Consul at Adrianople, in his report to the Foreign Office this year, gives an account of the Rose fields of the vilayet of Adrianople, extending over 12,000 or 14,000 acres, and supplying by far the most important source of wealth in the district. This is the season for picking the Roses—from the latter part of April to the early part of June; and at sunrise the plains look like a vast garden full of life and fragrance, with hundreds of Bulgarian boys and girls gathering the flowers into baskets and sacks, the air impregnated with the delicious scent, and the scene enlivened by songs, dancing, and music. It is estimated that the Rose districts of Adrianople produced in the season of 1866 about 700,000 miscals of attar of Roses (the miscal being 1½ drachm), the price averaging rather more than 3*s.* per miscal. If the weather is cool in spring, and there are copious falls of dew and occasional showers, the crops prosper, and an abundant yield of oil is secnred. The season in 1866 was so favourable that eight okes of petals (less than 23 lbs.), and in some cases seven okes, yielded a miscal of oil. If the weather is very hot and dry it takes double that quantity of petals. The culture of the Rose does not entail much trouble or expense. Land is cheap and moderately taxed. In a favourable season a donum (40 paces square), well cultivated, will produce 1000 okes of petals, or 100 miscals of oil, valued at 1500 piastres; the expenses would be about 540 piastres—management of the land, 55; tithe, 150; picking, 75; extraction, 260—leaving a nett profit of 960 piastres, or about £8 11*s.* An average crop generally gives abont £5 per donum clear of all expenses. The oil is extracted from the petals by the ordinary process of distillation. The attar is bought up for foreign markets, to which it passes through Constantinople and Smyrna, where it is generally despatched to undergo the process of adulteration with sandal-wood and other oils. It is said that in London the Adrianople attar finds a readier sale when it is adulterated than when it is genuine."

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus.—The beds in full cutting—that is to say, in their prime, may have every shoot cut away until the middle of June. Sprue, or very small Asparagus, may, however, be permitted to grow. This will hardly prevent the development of the dormant buds. *Broccoli*, see to the sowing of Cape and other autumn Broccolis. *Celery*, let the plants in all their stages have dne atteution as to pricking-out, watering, stirring the soil, &c. Tha watering, above all, is a most important point; it should ever he borne in mind that Celery will grow in a ditch. *Kidney Beans*, make fresh sowings, for those above ground are not much to be depended on. *Capsicums* may he planted under the front of vineries or in other warm situations. *Tomatoes*, if hardened off, may now be planted out; the blanks on the walls are most eligible. Plant them on raised mounds, which will have the effect of reducing their grossness. Attend to the thinning of plants in seed-beds.

FRUIT GARDEN.

If wall trees, of the stone-fruit kinds, have been hitherto well managed, they will exhibit a regular development of foliage throughout. No time should be lost in removing superabundant shoots from any place where there are indications of an

excessive flow of sap. It is in vain to suppose that a branch already too strong will exhaust itself by throwing out a number of vigorous young shoots; on the contrary, the latter, if suffered to remain, will establish fresh channels for a flow of sap adequate to maintain their excess of vigour, and this appropriation must of course take place at the expense of the weaker portions of the tree. The fruit of Peach and Nectarine trees may now be partially thinned; that of Apricots should be finally regulated. Raspberries usually send up many more shoots than are ultimately required; the weakest should be removed. Let mulchings be applied where borders are shallow, or in any degree exhausted.

FLOWER GARDEN.

Newly-planted shrubs will require thorough watering in periods of drought. Masses of American shrubs under or near large trees should have a top-dressing of some kind to keep them cool, and to compensate for the exhaustion occasioned by the roots of the trees. A coating of bog earth, sphagnum, half-rotten leaves, or old tan, will be perfectly suitable. Conservative walls, trellises, or ornamental arcades, should have close attention at this period. The more tender kinds of plants newly planted out should be protected from sun and wind, and if cold nights occur, and mats cannot be had, Laurel boughs will answer the purpose admirably. When the various beds are filled the surplus plants will be invaluable for planting on rockwork, and for mixing with herbaceous plants in borders, arranging each plant according to the height it will ultimately attain, and keeping the very dwarf kinds in front. Examine choice Roses in order to ascertain that their buds are not injured or destroyed by maggots, and water with manure water during dull weather. Divide Neapolitan Violets, transplant into rich borders, and shade with a few boughs until the plants are rooted. Sow Brompton Stocks, Sweet Williams, single Wallflowers, &c. Tie up Pinks and herbaceous plants as they require it. Rake and clean shrubbery borders. Continue to tie up Carnations as they spindle, occasionally examining the knots and easing these when required; keep the pots free from weeds, and water with soft or pond water. It is injudicious to give what is termed "a little and often;" when water is applied give sufficient to moisten the whole mass. Pinks are rapidly advancing; tie to neat, thin sticks; reduce the spindles, or flowering shoots, to one or at most two; supply the plants liberally with water as the buds appear. Continue to propagate Pansies, transplanting seedlings as they become large enough. Attend to the directions given last week as to shading, watering, fertilising, &c. Some persons are in favour of watering in the morning out of doors, and others prefer the evening; we like the morning, as a general rule, more especially for plants which have been recently planted out, such as bedding plants in the flower garden, and young vegetables transplanted from the seed-beds in the kitchen garden. To saturate the soil in such cases is in our opinion highly improper, as leading to a considerable waste of the accumulated ground heat, also as tending to exclude the genial influence of the atmosphere. With regard to young stock of the above kind, frequent sprinklings are all that are required; in fact, a kind of cutting treatment, chiefly in order to prevent undue perspiration of the leaf. If this waste is prevented through the day by early morning watering, the plants may safely be left to the dews during the night. Fine-rosed pots should at all times be used, and light sprinklings repeated will prevent the soil from becoming puddled.

GREENHOUSE AND CONSERVATORY.

Towards the end of the month some of the hardier stock in these structures, such as the hybrid Rhododendrons, Camellias forming buds, and Orange trees in tubs or pots, may be set out of doors. This will give liberty to such of the stock as must be suffered to remain, both on account of their tenderness and of the display they make. A sheltered spot should be selected, but by no means under the drip of trees. A temporary awning should be suspended over them for a week or two at first, but it must be very thin. When they are reconciled to the change, such as the Orange trees may be removed to other situations in the open air. Heaths in full growth will at this period require abundance of water, at least in bright weather. Many good specimens are lost through imperfect watering. The Erythrina crista-galli is a fine old plant: cuttings may be made of the young shoots of subjects which have been headed down. The old plants started in heat in January, and now exhausted with flowering, if removed to a cool and light greenhouse and suffered to go to rest, will bloom well a second time in September by the excitement of heat and moisture after resting a few weeks.

STOVE.

The increase of temperature previously recommended, and absolutely indispensable in order to have many plants in perfection, will encourage the attacks of red spider, unless a keen eye is kept on every plant, in fact, on every leaf, and if allowed to go on unchecked it will soon destroy the foliage. Use the syringe daily, especially in fine afternoons, and this will do much to prevent the enemy appearing; but after it has done so recourse must be had to effective applications without delay. A rule in gardening, which ought always to be acted upon, is never to allow an hour, still less a day, to pass without making an attack upon some kind of insect on the very first discovery. The rapidity with which their multiplication proceeds, and of which all gardeners are well aware, should prompt to immediate action. Such of the stove plants, or those belonging to an intermediate-house, as have made a good and early growth, may now be removed to a cooler house, which will arrest their rapid vegetation in some degree, causing robustness of habit, and in many a tendency to produce autumn and winter flowers. Every attention should also now be paid to keeping down vermin amongst Orchids. There is nothing better than fresh, sweet bran for snails and slugs. This may be placed about the pots either in oyster shells or crocks in the afternoon, and should be examined by candlelight, at eight or nine o'clock.

PITS AND FRAMES.

After the stock for the flower-garden masses has been removed, all the surplus Verbenas, Fuchsias, Pelargoniums, Calceolarias, Petunias, &c., remaining in store pots should be potted forthwith in three-inch pots, and their cultivation should receive every attention. As soon as they grow freely they ought to be stopped, and be made to form bushy plants. These will form a reserve to succeed plants in full bloom at this period, and also to fill up gaps as they occur in the beds or borders.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The work has been for the most part a continuation of that of the previous week. As soon as the thunder-showers ceased every exertion was made to bring up arrears, and far enough behind we are, when we must confess that up to the time of writing this, even our flower-beds have not been levelled, though several times turned roughly; and without the loss of a single minute, the character of the winter and spring has rendered much out-door work rather behindhand, where there was not additional assistance. Our chief work in the kitchen garden has been sowing succession crops of Peas, Beans, Lettuces, Cauliflowers, Turnips, Radishes, &c., and more especially Dutch-hoeing all advancing crops, whether weeds appeared or not.

Temporary Hotbeds.—We are not at all sorry—quite the reverse—that some correspondents tell us we shall do much mischief by speaking of such beds as we sometimes do—made of litter and droppings as they come from the stables week after week, with less or more of short grass; and they end by advising us to recommend the good old plan of turning, and watering, and sweetening such dung before making it into a hotbed, "for then even young gardeners would not kill their plants with steam, gases, &c." Now, be it understood that we have no objection to all this labour, care, sweetening, and decomposing the materials so used; and no one has more clearly stated that the vapours from rank dung and grass will kill all vegetable life to which they can have free access, except some hard-stemmed plants, such as the Pine Apple; and therefore we have been careful that when beds are made in this way there shall be a sufficient covering of old dung, half-decayed leaves, or soil, that, whilst receiving the heat produced, will keep down all noxious steam. Whilst so used the bed made from fresh material is just as safe as one made from dung which has been frequently turned and sweetened for several weeks, and thus has dissipated in the general atmosphere a good portion of its heat instead of this being turned to use at once. On carrying out our directions there can be no danger, and we economise the heat from decomposing material which in sweetening are sent into the air. We also know that this sweetening process reduces the manure to something like a third of its bulk—a matter of importance where scarcely ever enough in its rough state can be found, and where bulk and a temporary heat must be made the most of.

Our greatest gardeners will be the first to admit that there is less head work, less constant anxiety and consideration required in large princely establishments, where there is the right place for everything, than in those where for a great many subjects which must be had there is no proper place—where, for instance, thousands of bedding and other flowering plants must be produced as extras, so much so, that an uninitiated stranger would suppose that these flowering plants stood all the year where they were found in summer and autumn. Now, for all such forwarding purposes a little heat from fermenting materials is of great advantage, and it is of importance to obtain that heat at once instead of waiting two or three weeks for it. Secure the heat, and, however rank, you can always insure safety by covering with older material, soil, &c. Mowings from the lawn are very rank, but mixed with long littery dung from the stable, much of the watering that otherwise would be required is saved. For instance, desiring to help on Celery, Perilla, Lobelias, &c., with the least trouble, and having a few sashes that had covered Violets and Calceolarias, at liberty, we had two or three loads of long littery dung, the produce of ten days, brought from the stable, made into a bed for six lights, the few droppings regularly incorporated with it, well trodden, and then well watered, about 4 inches of rotten dung from linings put over it, and then about 3 or 4 inches of soil. Some old trunks of Spruce trees too far gone to be worth saving, say from 6 to 8 inches in diameter, were placed back and front for the sashes to rest on; and a better place for pricking out such plants, to be raised again for final transplanting, could not be obtained in the finest pit in any garden, and the appearance of the plants shows how much they enjoy the by-no-means-violent, but genial, regular bottom heat.

For such work, lights of frames have to answer many purposes. For instance, in the case of early Potatoes in frames, the frame can be moved to something else before the Potatoes are taken up, and oftener long before the frame is moved the sashes may be turned to such purposes as above, and straw covers, &c., put over the Potatoes, Carrots, or Turnips at night, instead of glass sashes. We lately made some beds such as above described, but as we could obtain short grass we mixed that with the litter, and in such a case little watering was necessary, as the grass would yield the moisture. In a bed of this description, but with a frame for two lights over it, and prepared as above, we inserted Verbena cuttings, the upper covering being rough sandy loam, with drift sand on the surface, and we have no doubt that in three weeks from inserting the cuttings, there will be strong vigorous plants to take up with good roots for planting. All such temporary beds will be anything but idle in summer. We have made beds of dung so sweetened as to be short indeed at making time, and though fully 6 feet in depth, have been disappointed in the heat not being continuous, with the help of linings, for Melons and Cucumbers, and we have made beds 2 or 3 feet less in height, of less worked, less sweetened materials, except at the surface, and these beds, without having to make linings, especially if water could be made to pass down into the beds, and air with it, would maintain a regular, and for a longer time genial, heat than the thoroughly worked and sweetened manure-bed. In short, let every one work his dung as he thinks best, but let the amateur rest convinced, that he may sweeten it less with perfect safety and, therefore, obtain more heat from his limited supply, provided he keep the noxious gases down instead of letting them into the atmosphere among his plants and cuttings. For instance, there are numerous hardy plants, such as Pinks, Wallflowers, &c., which he may strike from cuttings now in the open air, in sandy soil, and especially if covered with a sash or a hand-light; but all these will strike sooner, and the plants be stronger if there be a little bottom heat below them, even such as may be obtained by a mixture of short grass and stable-dung placed in a hole. When we used to grow Castor Oil plants, Cannas, Daturas, &c., out of doors in the flower garden, we found success was greatly owing to giving them two or three barrowloads of such rank hot stuff beneath them, which afforded heat to the roots at starting, and became rotten enough for them to feed in before the end of the season.

FRUIT AND ORNAMENTAL DEPARTMENTS.

In these the work was chiefly a continuation of that of the previous week, but besides edging and preparing flower-beds for planting about eight days hence, as experience has told us there is little gained by hurry, when now most of the plants are in the ground in temporary beds, we have been anxious to finish with two matters, and trust to have done so before this is printed. First, we shall not be able to mow all the lawns and pleasure grounds, but we have mown a good swathe by the sides of all the *walks*, and this done early, and repeatedly is one of the great secrets for keeping walks clean, firm, and free of weeds; and the second matter is to cut with an edging iron the sides of all walks, using a line, and taking off as little as possible, but enough to show a clear edge. If the walks are, as they should be, not more than 1 or 1½ inch below the grass verge, the sharp-cut edging, though repulsive to fine taste, will not show more than a few days, and that eyesore is twenty-fold compensated by the ease with which such grass edgings are clipped throughout the summer.

There is another proceeding which we would recommend to amateurs if they wish such walks to remain neat after cutting the edges. This cutting will leave the sides a little coloured, and more earthy than the walk as a whole. Scatter a little salt for 6 or 9 inches in width, and on this a little sandy gravel. The sides of the walk will thus be neat and clean, will be easy to sweep during the season, will after a sweeping or two become of the same colour as the main part of the walk, and, as a rule, these sides will be free of small weeds, where otherwise they would be almost sure to vegetate. If in pleasure grounds the grass close to walks is allowed to become long, and produce seeds, it is next to impossible to keep the walks free of weeds. —R. F.

CRYSTAL PALACE.—The Great Flower Show, one of the events of the London fashionable season—is appointed for Saturday, May 25th. As this is the first great show of the year, and as the recent warm, sunny weather has had a most beneficial effect upon the flowers, the show, it is anticipated, will be unusually fine. It also enjoys the advantage of being fixed for the day appointed for the celebration of Her Majesty's birthday.

COVENT GARDEN MARKET.—MAY 22.

HOWEVER much the weather may vary, we have no diminution in the supply, the growers' stands being filled to a late hour each morning, or it may be the limited amount of business that is doing which makes the quantity seem so much greater. We have now from the Continent, Peaches, Apricots, Cherries, Melons, and a few Pears, Kidney Beans, Carrots, Turnips, Cauliflowers, Artichokes, and Tomatoes; new Potatoes from Lisbon, Malta, and the Channel Islands. Good Regents of last year's growth command a ready sale.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples ..... ½ sieve	3	0	to	4	0	Melons ..... each	8	0	to	12	0
Apricots ..... doz	4	0		0	0	Nectarines ..... doz.	15	0		24	0
Cherries ..... box	2	0		3	0	Oranges 100	5	0		10	0
Chestnuts ..... bush.	0	0		0	0	Peaches ..... doz.	21	0		42	0
Currants ..... ½ sieve	0	0		0	0	Pears (dessert) .. doz.	0	0		0	0
Black ..... do.	0	0		0	0	kitchen ..... doz.	0	0		0	0
Figs ..... doz.	10	0		15	0	Pine Apples ..... lb.	5	0		8	0
Filberts ..... lb.	0	0		0	0	Plums ..... ½ sieve	0	0		0	0
Cobs ..... lb.	0	9		1	6	Quinces ..... doz.	0	0		0	0
Gooseberries .. quart	0	6		1	0	Raspberries ..... lb.	0	0		0	0
Grapes, Hothouse .. lb.	5	0		10	0	Strawberries ..... oz.	0	6		1	0
Lemons 100	5	0		10	0	Walnuts ..... bush.	10	0		20	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes ..... each	0	6	to	0	8	Leeks ..... bunch	0	3	to	0	4
Asparagus .... bundle	4	0		7	0	Lettuce .... per score	1	0		2	0
Beans, Kidney, per 100	1	0		2	0	Mushrooms .... pottle	1	6		2	0
Scarlet Run, ½ sieve	0	0		0	0	Mustd. & Cress, punnet	0	2		0	0
Beet, Red ..... doz.	2	0		3	0	Onions .... per bushel	4	0		5	0
Broccoli ..... bundle	2	0		3	0	Parsley ..... per sieve	3	0		4	0
Brns. Sprouts ½ sieve	0	0		0	0	Parsnips ..... doz.	0	9		1	3
Cabbage ..... doz.	1	0		1	6	Peas ..... per quart	3	0		5	0
Capsicums 100	0	0		0	0	Potatoes ..... bushel	4	0		6	0
Carrots ..... bunch	0	6		0	8	Kidney ..... do.	5	0		6	0
Cauliflower ..... doz.	6	0		12	0	Radishes doz. bunches	0	9		1	0
Celery ..... bundle	1	0		2	0	Rhubarb ..... bundle	0	4		0	6
Cucumbers ..... each	0	6		1	4	Savoys ..... doz.	0	0		0	0
pickling .... doz.	0	0		0	0	Sea-kale ..... basket	0	0		0	0
Endive ..... doz.	2	0		0	0	Shallots ..... lb.	0	8		0	0
Fennel ..... bunch	0	3		0	0	Spinach ..... bushel	2	0		3	0
Garlic ..... lb.	0	8		1	0	Tomatoes .... per doz.	3	0		4	0
Herbs ..... bunch	0	3		0	0	Turnips ..... bunch	0	6		0	0
Horseradish .. bundle	2	6		4	0	Vegetable Marrows dz.	0	0		0	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Golden-veined Violets (*Oakley*).—The leaves you have sent to us are very beautiful, and, as they have been similarly golden-veined in two following years, the sport is probably permanent. If so, instead of "preventing it," we think some one of the London florists would readily purchase the whole of your plants.

Cover for Vol. X. (*W. C.*).—If you enclose fifteen postage stamps with your address to this office, you can have the cover sent free by post. As the Vine mildew has appeared in your vinery, dust all the leaves with flowers of sulphur without delay. Syringe at the end of a week, and repeat the treatment until the mildew ceases to appear.

Advertisement (*R. G. Oakley*).—It is in our last number, but from "Roberts & Sons"

Aspects (*J. H. H.*).—For the purpose you mention, we would decidedly use the south-east wall in preference to the north-west. We cannot state the amount of piping in Mr. Meredith's houses which do so well, both on the east and west aspects. Piping must be regulated according to the time the fruit is wanted.

Coleus Verschaffelti for Bedding (*J. J. G.*).—Coleus Verschaffelti will do as a "bedder" in a tolerably sheltered place. It does well about London, and was very fine last season at Woburn Abbey. Mr. Fish has done little good with it in his windy position, but means to try it further. It would be well to keep some Perillas in reserve. The specimen you sent was of Bougainvillæa spectabilis.

Covering Hot-Water Pipes for Bottom Heat (*C. W.*).—Your proposal to place first a layer of stones round and a few inches over the pipes, then rough tan, all the finer part being sifted out, and at the top for plunging the pots either the fine tan or sawdust, will answer admirably, provided you take care that the rough tan over the stones that surround the pipes does not become dry; then it will permit the heat to rise freely. The moist state you may secure by having a pipe by means of which you can pour water among the stones. Do not cover the pipes with stones deeper than you can avoid—say 3 inches. We would put washed fine gravel over the stones, and then the tan would not find its way among the larger ones.

Tiffany (*Tiffany*).—It was advertised in our Journal last week.

Peach Trees almost Destroyed (*G. E. T.*).—Probably the Peach trees are suffering from the severe frosts. We do not think that the early pruning would affect them. We have lost shoots which were not pruned at all. In your case, with water standing so near the surface, at the other side of the wall, we should imagine that the border would be too wet, and the wood, in the late dull autumn, imperfectly ripened. A drain in front, from 3½ to 4 feet deep, would be the best remedy. There are very singular facts in connection with water in certain positions. Water stands as near the surface at the highest end of Mr. Lane's celebrated orchard-house vinery.

Insect Eating Rose Leaves (*P. P.*).—It is a Curculio, or Weevil, which eats the leaves of your Roses. We think it is C. maculatus, but the specimen was too much crushed to be certain. Spread a white cloth at night beneath the trees and shake them. The insect feeds at night.

Blistered Peach Leaves (*A. M. W.*).—Pick them all off. They are caused by cold checking the growth of the leaves whilst the supply of sap from the roots remains unchecked. Shelter by glass or other covering is a preventive of blistered leaves.

Heating a Melon Pit (*Learner*).—The brick pit 9 feet wide and 3 feet below the ground level, which you have used for Melons, and as you cannot heat with dung and tan you propose to heat with a flue, we would treat in this way. We would run a flue round on the floor, 2 feet from the front and 2 feet from the back. Above the flue, flow and return, we would make a floor 3 feet from the glass. Slate or stone would be best, but stout slabs of wood would do very well. We would lay these slabs so that there should be from 2 to 4 inches between them. These spaces we would fill with clinkers, brickbats, &c, and rough plaster them. On this platform we would place in the centre of each light, back and front, an open drain tile, or a wooden box, communicating with the chamber in which the flues run, and furnished with a lid to let out heat for the atmosphere as wanted. By pouring water into these openings you can have moist bottom heat at all times, and moist top heat as you want it; and there will be no danger of scalding, as the water will not touch the flues. For this system, if the flue is built, raised a few inches above the floor, the water poured on will go over the whole of the floor. If the floor was concreted all the better. The 3 feet will give ample room for foliage and earth. There would be more trouble in heating the two divisions of your 18-feet pit separately, but you can commence with that next the furnace, and give plenty of air to the farther part until you wish to start it. The air makes all the difference. We observe no red spider or other insects on the Vine leaf, and the blotches are the result of scalding. The best remedy is early air-giving.

Variegated Loeelia (*J. B. P.*).—We cannot form an opinion upon such a specimen. Send a good plant in a pot to the Floral Committee of the Royal Horticultural Society.

Grapes Dark Coloured (*J. S. H.*).—Though no bigger than Peas, they are severely "spotted"—that is, they have a peculiar ulceration which gardeners call "the spot." We believe it to be caused by defective root-action. If the roots are kept warmer and better nourished we think the evil will not reappear.

Dahlia Culture (*Dahlia*).—We shall readily give information to any grower of this flower; but we do not know of any difficulties in its culture.

Covent Garden Market (*J. Woods, jun.*).—We know of no such person as you need. The regular attendants will not incur the trouble of commissions.

Pampas Grass Drying (*W. R. J.*).—The stems required for ornamental purposes should be cut directly the flower-heads attain their full size, and should be dried in the sun. We can only account for the glumes or valves falling from their being cut when mature; washing them with water will not tend to their preservation.

Tree Mignonette after Flowering (*M. S.*).—Mignonette is a perennial in a greenhouse, and after flowering may have the surface soil removed and have a top-dressing of rich compost, the plant being kept closely pinched; but it will not flower nearly so finely as plants sown and grown on for the purpose. The flowers are smaller, and the plant less vigorous.

Eucharis amazonica Culture (*C. M. Major*).—The plant should have a rest, which you may give at any season after the plant ceases growth by withdrawing it by degrees from the hotbed, and keeping the soil dry, but not so as to cause the foliage to flag, and it cannot have too much light and air. The pot, we presume, is full of roots and the drainage good. If the plant is growing do not check it, but allow the growth to be made; then when the foliage attains its full size lessen the supply of water gradually, and expose the plant fully to light and air. This will check the growth, but you must not lessen the amount of water so as to cause the leaves to flag. It should have a rest of this kind for three months in every year; but probably your plant will soon bloom.

Pancratium and Ismene amancæs (*Idem*).—The Pancratium requires precisely the same treatment as the Eucharis. The Ismene amancæs also requires the same treatment as the Pancratium, to which it is a closely allied species. You cannot give them too much encouragement when growing, nor ripen off too well by full exposure to light. The potting should not be too liberal, for they flower more freely and certainly when the roots are confined.

Rhododendron Falconeri Injured by Frost (*A Subscriber*).—You may take up the plant from the open ground now, and you may cut it in, this being a good time, and it will start better from the part protected by the snow than from the leafless portion of plant, that being the part injured by frost we presume.

Soil for the Orange, Lime, Shaddock, and Camellia (*Idem*).—You cannot have a better soil for all those than the surface of a good and rather light loamy pasture, the turf being cut off from 1½ to 2 inches thick, and being chopped and made pretty fine with a spade. It should be used fresh, and the border should be well drained, and in planting the ball of each should be loosened and the fresh soil worked in amongst the roots. The soil should be made firm about the roots. They should be planted rather high, as the soil will settle. Camellia Valtevaredo is a plant of fine habit and foliage, having finely-formed rose-coloured flowers.

List of Rock Plants (*Buz*).—Achilleæ Clavennæ, silvery foliage and yellow flowers; Alchemilla pentaphylla, greenish yellow; Alyssum saxatile compactum, yellow; Antennaria, silvery foliage; Aquilegia alpina, purplish blue, with white centres; Arabis alpina, A. albida, A. lucida variegata, A. caucasica variegata, all with white flowers; Aubrietia deltoidea grandiflora, lavender blue; Campanula garganica, purple; Cerastium tomentosum, white; Cheiranthus alpinus, yellow, C. Marshalli, orange; Cistus formosus, yellow, C. Ledon, yellow, C. roseus, rose; Convolvulus mauritanicus, blue; Cyclamen coum, red; C. repandum, rose-colour, C. europæum, rosy pink, C. neapolitanum, red; Daphne cneorum, pink; Dianthus floribundus, pink; Draba aizoides, D. hœmtica, both yellow; Dryas Drummondi, yellow; Erinus alpinus, rosy purple; Genista procumbens, G. triquetra, both yellow; Glechoma hederacea foliis variegatis, reddish pink; Gnaphalium hyperboreum, white foliage; Iberis saxatilis, I. sempervirens, I. Tenoreana, all white; Linaria alpina, bluish violet, L. cymbalaria variegata; Lotus corniculatus flore pleno, yellow; Meconopsis cambrica, yellow; Mimulus cupreus, orange; Orobus vernus, purple; Oxalis tropeoloides, yellow; Phlox Nelsoni, white, P. verna, rose; Polygala depressa, blue, P. vulgaris, bluish purple; Rhododendron hirsutum, pink; Rubus chamæmorus, white, ornamental edible fruit; Saxifraga æmois, brownish crimson, S. aizoides, yellow spotted orange, S. biflora, rosy purple, S. caryophylla, white, S. cotyledon, white, S cymbalaria, sulphur spotted orange, S. hirculus, yellow, S. juniperiana, yellow, S. oppositifolia, rose, S. umbrosa crenata, white; Sedum acre, anglicum, cruentum, Ewersii, and virescens, all yellowish; S. purpureum, purplish rose, S. pallidum roseum, light pink, S. albicans, white; Trifolium alpinum, rose; Vinca herbacea, V. major, V. major elegantissima, V. minor, V. minor plena, all blue. Of all of the above you may procure plants, but some of them may be raised from seed. It is best, however, to obtain plants. They all will succeed well in a rather shady situation, but not under trees.

Japanese Maize (*Idem*).—We presume it is the variegated variety about which you inquire. It attains to a height of 6 feet and more, and is not, therefore, suitable for edgings. It is very finely variegated, and well worth growing. It requires a warm, sheltered situation, and may be used as a centre to a large bed, or at the back of a ribbon border, and it requires to be sown each year, and in heat, so as to get it strong before planting out.

Australian Spinach (*Idem*) —It requires to be sown in heat, and when strong planted out in good rich soil.

Sorghum tartaricum (*Idem*).—It is a tall-growing Grass, of no use in our climate but as fodder for cattle.

Cape Aster (*Idem*).—Cape Aster, or Agathæa (Cineraria) amelloides cœlestis, is an evergreen, low-growing shrub, attaining to a height of 18 inches. It flowers very freely; the flowers of a bright blue. It requires to be wintered in a greenhouse; is raised from cuttings of the half-ripened wood placed in a mild hotbed. It cannot be raised in the open border.

Delphinium formosum (*Idem*).—The seed of this lovely bright blue-flowering plant may be sown now in an open border, and when the plants are large enough to handle they should be pricked off in a bed of good rich soil about 3 inches apart, and in autumn planted where they are to bloom. The seed may be sown in March in a hotbed; the plants being pricked off when large enough to handle, and grown on, will flower the same year.

Six Select Perennial Phloxes (*Idem*).—Purity, white, carmine centre; Madame Thibaut, crimson, dark centre; Picturata, rose, centre marked crimson; Madame Corbay, white, violet centre; Beatrice, carmine crimson, and Madame Lemort, violet mauve, flaked with purple; another good one is Triomphe de Twickle, carmine, edged white.

Sea-kale Bitter (*S. J. T. E.*).—We should attribute the bitterness to something deleterious in the ashes, which are not a desirable material for blanching it. Sand is far better, and nothing is equal to pots covered with litter. Perhaps the Sea-kale was imperfectly blanched; it would then have a strong bitterish taste.

Names of Plants (*Llanvedyn*).—Tellima tenella. (*Bournemouth*).—Halesia tetraptera. (*B. P. J.*).—Trillium grandiflorum. The "Manna" is Oplismenus crus-galli. (*G. A. F.*).—Ledum latifolium. (*J. P.*).—Daphne cneorum. (*P. E. F.*).—1, Ledum latifolium; 2, not determinable; 3, Staphylea pinnata.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending May 21st.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 15	29 916	29.620	53	40	54	52	N.E.	.00	Overcast and cold; cloudy, cold, and dry; densely overcast.
Thurs. 16	30 054	29.977	53	32	53	52	N.E.	.00	Cloudy and cold; densely clouded; overcast.
Fri. .. 17	30.124	30.067	60	27	53	52	S.W.	.00	Fine; overcast; very fine at night.
Sat. .. 18	30.039	29.925	66	42	53	52	E.	.00	Frost early in morning; fine; very fine at night.
Sun... 19	29.867	29.714	67	45	55	53	E.	.02	Very fine; densely clouded; overcast at night; rain.
Mon... 20	29.570	29.529	69	50	55	51	N.W.	.76	Overcast; constant heavy rain; very wet at night.
Tues. . 21	29.939	29.560	54	30	55	51	N.E.	.09	Clear and cold; rain; cold and wet; cloudy and frosty.
Mean	29.929	29.798	60.28	38.00	54.00	51.71	..	0.87	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE STORY OF THE BLACK BANTAMS.

Cousin Janet took a fancy she would have some chickens of her own. She had an idea that I had derived great pleasure and profit from my White Dorkings, and being of rather a speculative turn, she would make the venture; so one morning early in April she sent a maid across to South Field, to borrow one of our White Dorking hens to sit upon some Black Bantams' eggs she had that morning received from Brighton.

"A White Dorking weighing 7 lbs. to hatch Black Bantams weighing a few ounces—absurd!" said papa; "I hope you told her so."

"No, I did not."

"Then you would have done the greatest kindness to have said so. They have no convenience for poultry-keeping at Uncle Tetley's, and cannot succeed."

"I can tell her so yet, it is not too late; only I am afraid Cousin Janet will think me mean and ill-natured."

"And if you do," said Aunt Margaret, who was with us at the time, "she will miss the knowledge she might have gained by experience. Ah, Maud! if you live to be an old maid you will find out it is much better to let people have their own way—read their school-books after their own fashion, upside down if they chese."

"If I were you, Maud," suggested mamma, "I would send in the hen and your 'Poultry Book,' and ask her to read it, so that she might know what she was doing."

"Janet will bring up her chickens and then read the book," said papa with a great laugh; "and snub you into the bargain for seeming to know more than she does."

But Cousin Janet did not do that: she accepted the hen with a long string of compliments, but returned the book with many thanks, saying she "did not need it—had more than she could read, and that she knew all about poultry-keeping, having once visited at a farmhouse for three months, where they kept a first-rate housewife."

So the Dorking was taken to her new quarters. She had long cherished the desire to have a family of her own; yet when shown the nest containing more than a score small, very small eggs, she manifested great discontent—seemed by instinct to know that they were not her eggs, and would not produce her sort of chickens. So she grumbled and cackled, and flew up and down; and though over and over again she was taken to the nest, still it would not do—they were not her own eggs, and it was not her nest. She was not like the little Game hen that stole a nest in a manger, and, when the eggs were found and removed, took the halter ball under her wing, and kept it warm for days and nights; so determined to sit was she, that anything was better than nothing. There was no way for it but taking the hen back to her old nest and seeing if that would bring about the desired result. Even then she did not seem exactly suited, but scratched about among the eggs, turning them right and left. Some rolled out—they were given back to her; again she rolled them out more roughly than before, for this time they were broken. At last she was left in quiet possession of sixteen eggs, over which she brooded, and evidently intended to take great care. Whether the Dorking was gifted with numerical qualifications, or was a believer in the old saying, "There is luck in odd numbers," I cannot tell; but when she left her nest the next day there were seventeen eggs—a large round white one in the midst of the small ones: this was taken away. Next time the eggs were counted there was still an odd number, another large white egg being added; but this time it was left to take its chance—no doubt it would come on well. It was a great favourite: it was always found in the warmest, softest part of the nest—no daily turning over of the eggs ever turned it to the outside.

As the twenty days passed the wonder was, how many chickens the Dorking would hatch out of her seventeen eggs. She had not broken any, but the critical time was yet to come, and, which appeared far more likely to have happened, Cousin Janet had not broken any. Never "sitting hen" had such a life of it as the poor Dorking had. Many a time did I wish she had been a Game hen, better to have defended the rights and quiet of her nest. Of course the hen and eggs had been removed to Ridge House as soon as the former had settled. Every egg was marked on one side "up," on the other "down," and daily did Janet take off the hen to see if the eggs were all as they should be, all "up" or all "down;" if not, they were turned over to the proper side, for the days when they should be "up" or "down" were marked in her almanack, so she "could not forget if the hen did." Then every four days the nest was watered with warm water, and, when the last week arrived, daily. Then every night a candle was taken into the outhouse and the eggs looked through. All the eggs had the same appearance—they were either all good or all bad; Kate said the former, Janet the latter. So a basin and warm water were brought to test them; for George said, "If they sank they had chickens in, the weight carried them down." Cook said, "If they had chickens in they would float, for as soon as the bird felt the influence of the warm water it kicked about, and the motion kept it up." George said he could not tell how anything so tightly packed as chickens were in the shell could possibly kick. "Why, then," replied cook, "they breathe faster, and that moves them about."

Kate thought "nothing could breathe without air," and she did not see "how the chicken could get any through the shell and the thick underlying skin." Aunt Margaret thought "every egg contained a certain portion of air kept in reserve for the growing bird."

So, with so many different opinions, Janet was puzzled and refused to try the warm-water test.

"And when they snip," said Janet, "what would you do? The hen has so many I am sure she cannot take care of them all. I have heard say you may help them out by wrapping them in a warm, moist, flannel; and there were four with little holes in this morning. I will try."

"But, why would you take all that bother when the hen can do it for you so much better?" said Aunt Margaret. "I would leave her quietly alone to do her own work; and if you must help, just take away the little chickens and put them by the fire, and then the others will come on faster."

During the day four of the chickens were put into an old hat and placed before the kitchen fire, covered over with flannel. The brimful kettle was hanging up over the fire, its low-set and yet far-projecting spout already filling with the swelling water; a few minutes and it boiled over, pouring out its scalding contents right into the hat, which seemed to have been placed there on purpose. The poor little Bantams' short lives were soon over.

Next morning there were five more chickens out of the shells.

These were pnt into a basket and taken into the parlour, where there was no kettle to boil over. During the day four more came ont, and the one White Dorking; and in the evening Janet was in a great dilemma. What should she do with her Bantams—roll them up in fiannel and put them in the oven all night, or give them back to the hen? Everybody thought they would be trampled to death before morning, and yet she must have them sometime, so why not at first? Next morning Janet found two of her chickens dead, and one egg squeezed so flat that the bird was killed; aud the two remaining eggs though chipped did not appear to be making any progress, and certainly had not much chance, for their mother did not care about them in the least; she stood upon her legs, shook her wings, and walked about and called her little ones after her, aud finally settled down in a corner, as far away from her nest as could be, appearing only to have one desire—to thrust her tail right through the stone wall out into the garden.

What could be done with the forsaken eggs? Janet was sure she could bring them out alive, saying it only required time, patience, nicety, warm water, and a pair of very fine scissors; and Janet had one and all of these. So she made the trial, and sat for hours in the hot sunshine of a May day by the table on which was placed a china basin containing a little warm water in which were the eggs. When the water cooled she added more warm, then took out one egg and wrapped it in cotton wool and put it on the stove. Every few minutes she opened it out to crack the shell a little more, or to break off pieces that were already cracked, until the bird had its feet free, and then could help itself. Then the other egg took its turn under the operator's hand.

Time and patience indeed worked wonders beneath Janet's delicate fingers; and when the evening came the chickens were out of their shells and alive. Poor little weak things, they looked unable to hold up their heads or stand upon their legs, and very proud was Janet when she took them to their mother; but the Dorking was unwilling to regard the new comers as her own; she would not shelter them, and they were afterwards given to her in the dark, so that when the daylight came she could not know them from her own.

Janet's hen-house, a temporary place made of wood, which George had put up, was one of those clean places, all too clean for chickens. The poor hen could not find a fly or spider on the fresh lime-washed walls, and the floor was constantly scoured out with stones as they do in Yorkshire, so that the Dorking might scrape and scrape, and yet find nothing, not even a bit of hay, or grass, or straw to make a nest of, or to toss about for pleasure as mother hens love to do. There was not a grain of sand or speck of dust—nothing in the world for the hen to do. She could not even turn over the fountain, it stood so firmly; and the dish containing their food was too shallow to be upset, so there was nothing left for the chicks but to paddle in and out among the bread and milk, and waste much more than they ate.

A fortnight passed, there were no deaths to register in Janet's poultry book; if the Bantams did not thrive and grow, they at least lived. Cook said, "They never would be worth anything in the world. They wanted more air and sunshine; they ought to have fresh green sods daily from the field to peck at and play with, and thus give them something to do besides eating and sleeping." So on the first fine day Janet gathered up all her chickens into her little black silk apron, and took them out into the garden to sun. They could not have sunshine in their little house, so she would give them an airing; but the chickens did nothing but fret and make a great noise, which their owner bore with admirable patience, thinking it was for their good. At the end of half an hour she took them home to their half-wild mother, who in her anger at their absence knocked them about right and left, rapping them hard with her bill, covering them with her wings one minute, and the next sending them adrift, scolding all the time, until the poor little Bantams began to wonder, like Trotty Veck, if they had any business in the world.

But a darker day was drawing near for the chickens, a day ever to be remembered; it was when they were nearly a month old just the age when mortality runs riot among them, carrying off the weakly ones, and testing the strength even of the strong. It was a rule at Ridge House to take in a good feed every night for the little things to find early in the morning, so that Janet had no need to go to them until after breakfast. One Saturday night the rain came down in torrents, so the maid put aside the food, thinking she would take it by-and-by. She never remembered to do so. Next morning the bells were ringing before Uncle Tetley or any one, save Aunt Margaret, made an appearance to breakfast. There was a great hurry and fuss to be at church in time. Then after service it was pleasant loitering slowly home through the country lanes. Janet seemed to find it so, for she was slower than any one. Then came the dinner earlier than usual, for Cousin Walter had undertaken to teach a class in the Sunday school for a friend who was away in London. Then there were cake and wine and fruit, the good things which could not be hurried from, so that it was three in the afternoon when Janet sought her Bantams, not to see if they wanted anything, but for her own pleasure, unlocking the door and going in, without any foreboding feeling of coming sorrow. She called out "chick, chick," and the hen flew up and bit her wrist, and no wonder, for the floor was strewn with her dead chickens, three, four, five of them, another gasping out its last, its head resting on the empty fountain. There was not a crumb of bread, or groat, or bit of rice to eat, nor even a sod to peck at in desperation, and the few Bantams that were alive crawled feebly after their mother.

I am afraid we did not sympathise much with Janet, for Aunt Margaret called her a cruel girl to pine her chickens to death; and cook said, "There was little sense in crying after spilled milk, and that all the wailing in the world couldn't bring 'em back;" and "Janet declared it would not have happened if she had not trusted Mary to do it;" and Kate said, "Janet never would succeed with poultry because she regarded them altogether from a wrong point of view. She thought of her own pleasure, not their good."

After this Janet took great care of her three Bantams, she gave them sand and sods, and fresh water, never forgot to feed them, and never again separated them from their mother, but took them out into the sunshine for hours; but the evil done was in a measure past remedy, a pined chicken seldom recovers. One of the three sickened and died before it was two months old; another, a little hen, grew up deformed, its back was crooked, and its tail on one side. Only one grew up of fair proportions, a fine little fellow he was, loud in voice, quick of motion, and with a coat glossy as an old starling's. A general pet was Master Charley; he would spring on your hand, eat out of your fingers, and betray no fear nor desire for liberty.

When the mother Dorking left her Bantams, which she did not do until her new nest was half full of eggs, then the Bantam hen drooped and pined away, and was at last found dead under some rhubarb leaves. Master Charley did not miss her much, she was no companion to him in his long strolls through the fields, or his high flights upon the walls, where he used to beat his wings and crow out lustily, with a voice like a giant's. But Charley lost favour, he was a great thief, and the thing he liked best to steal was butter. Many a time in a week was he found upon the kitchen table digging his bill deep into the soft new butter. So Aunt Margaret said it would be best to send him away. He was taken to a farm-house a few miles in the country; but he did not settle there, he missed the old faces, and moped about in corners, hanging his wings and tail, and was never heard to crow. He had not been there many weeks when he was drowned in a tub of wort. He was then put into a basket, and sent home. We dug a hole in the Vine-border, unreached by Vine roots, and as near as we could remember to the fifteen Bantams, and we buried him there. Janet said "she was sure the eggs must have ailed something, or all the chickens would not have died."—Maud.

CAVE CANEM.

(FOR CANEM READ CAMBERWELL.)

In the beginning of the year I advertised some Game Bantams for sale. I was kindly answered by a gentleman who had evidently his "little place in Surrey," not far from "The Green," and that pellucid stream known as "The Canal." I was requested to send some birds immediately, and to write word by what train they would arrive in London. "An acceptance at three days" was promised by the next post. There was something so "truly rural" in the whole affair that I could not do otherwise than exclaim with Charley Bates, "So jolly green!" Thereupon I sent two letters, the one saying that the birds would arrive in London by such and such a train, the other to a "denizen of 'The Grove,'" a little bird who whispered by return of post unsatisfactory things.

I did not send the birds. In a day or two after the time when they should have been delivered, I had a letter to the

effect, that if I had not sent them I was not to do so at present, as my correspondent had failed in disposing of some birds, and had not room for them.

After a while, when I had almost forgotten the matter, I received a note requesting me to send some pens immediately. I wrote asking for a cheque or a reference. I heard no more. There used to be a phrase, "It's all up at Peckham." I suppose this was the case at Camberwell.

The inquiry in last week's Journal concerning Camberwell brought the matter to my recollection.—EGOMET.

WOODBRIDGE POULTRY SHOW.

I WAS much gratified to see by the letter of your correspondent "EGOMET," which appeared in last week's Journal, that the Committee of the Woodbridge Poultry Show now purpose to discharge in full all outstanding claims. This is a step that will, no doubt, insure a perfect reconciliation with all claimants, and also public support, should it be deemed advisable to resuscitate the Woodbridge Poultry Show. That the Committee were placed in a most unenviable position during their last Show, from the fact of a sudden gale of wind overturning the tent, is probably known to most of your readers, and, doubtless, a very heavy reduction in the receipts from this unforeseen cause ensued, independently altogether of the great personal annoyance to the managers themselves.

The Committee having adopted their present course, I cannot forbear (as having arbitrated at so many of their meetings), giving my unqualified approval of the great care and attention bestowed on the poultry during the time of exhibition, which, in fact, could not be exceeded; nor can it be doubted the institution of the Woodbridge Show did much to improve the poultry in the surrounding district.—EDWARD HEWITT.

ARTIFICIAL HATCHING.

I SHOULD feel greatly obliged if some of your readers who have had personal experience and success in artificial hatching would kindly tell me what they consider the proper temperature for eggs. I presume there would be a difference in cases where the whole of the egg is constantly exposed evenly to the same heat, from those where only one side receives the greatest degree.

What should be the temperature when the egg receives on all sides the same heat? and when one side receives a greater degree, of what temperature should the hottest side be?

An old book which I have on the subject states, that to have strong birds there ought to be a difference in the heat applied to the top and bottom of the egg of from 8° to 10°, but I cannot believe there should be so great a difference.—K.

[There need be no attempt made to secure a difference of temperature between the upper and under side of an egg whilst incubating. When a hen sits upon eggs the temperature around them is uniform. The temperature should be 104°; but 2° or 3° higher or lower occasionally are not detrimental, and if once in each twenty-four hours the temperature for half an hour is allowed to sink to 90°, in imitation of the hen's leaving the nest for feeding, all the better. This lowering of temperature must not be permitted during the day or two during which the chicks are coming out of their shells.]

RIVAL INCUBATORS.

I THINK most of your readers will agree with me that one of the greatest drawbacks to poultry exhibitors is the difficulty of obtaining early chickens. Cochins are the only fowls which can be safely relied upon as sitters in the early part of the year, and they frequently crush one-half of the chickens in hatching, and clumsily tread some of the others to death afterwards. Moreover, to fanciers of a non-sitting variety, the necessity of keeping sitting hens which are useless for the greater part of the year, is a great inconvenience. This obstacle seems likely to be overcome in a great measure by artificial incubation, the great difficulty being to select from among so many incubators, new and old in principle, that best adapted to the purpose. I would beg to suggest that, alive as you always are to the interest of exhibitors, and holding the position of the recognised authority in poultry matters, you should kindly intimate to manufacturers of incubators that you would be willing to experiment with the different incubators, and report on the merits of the same after the manner of *The Field* trials of breech-loaders and sporting rifles. I feel persuaded that your kind compliance with this suggestion would be a great boon to very many subscribers.—BROWN RED.

[It was an easy task for our sporting contemporary to decide on the merits of rival rifles; but to watch incubators for three weeks would require an expenditure of time which we cannot afford. Moreover, we think that if three disinterested breeders of poultry would undertake the task their decision would be more satisfactory.—EDS.]

NON-RESISTING BEES.

A FEW weeks ago the attention of bee-keepers was directed to the subject of non-resisting bees. That the bees of a hive well stored with honey and a numerous population should allow themselves to be tamely plundered by marauders, without offering any opposition, is certainly an anomalous proceeding; but that such is the fact I am able to attest from personal observation.

In the early part of February last, my attention was directed to bees deliberately entering a hive and carrying off the stores without challenge. They came from a colony a few yards distant, as was proved by sprinkling them with flour, and the circumstance of their meeting with no repulse from the inmates led me to suppose that they had found out a queenless hive. An inspection of the interior, however, proved not only that I was mistaken in my conjecture, but disclosed the gratifying truth that an active queen reigned, and that there was no lack in the number of her attendants. Although, however, the population was such as to be capable of defending itself, it yet in the most unaccountable and helpless manner allowed its treasures to be pillaged. For two weeks a regular system of pilfering was established, and not till the unfortunate inmates were reduced to the verge of famine did they awake from their apathy and become alive to the evil that had befallen them. Then, when almost too late, a change of sentiment took place, for on the return of the thieves to complete their work of ruin, they were met at the entrance, collared, and stung to death, or hurled over the landing-board.

So discouraging was the reception from their enraged victims, that a timely retreat was deemed advisable and a truce was entered into for the future; but as the stores had in a great measure disappeared, I found it necessary to replace the emptied combs by some well-furnished ones which I had laid aside as a reserve for any weak stocks that might require a little help in spring. The new supplies kept up the spirits of the bees, and they were not again molested by their former assailants.

All went on well till the 22nd of April, when the hive in question for a second time became the victim of misfortune. Thieves again found a peaceable entrance to it, but this time they came from a different colony—one that occupied the site farthest from it in the apiary. The weather was favourable for making incursions, and the new thieves continued them daily till the 28th, when a grand and final siege was laid to the sweets, and the whole carried off without remorse.

What struck me as rather remarkable was the fact that not only was no defence by the assailed set up, but that they never seemed to intermit their labours for a single minute during the commission of the depredations. Pollen was as diligently carried in as honey was carried out, and the queen, without showing any signs of perturbation, pursued her maternal duty of oviposition. Not one intruder attempted to injure her, and the unfortunate bees seemed to have no concern but care for their brood, of which there was a considerable quantity in the hive.

As the food was now exhausted I knew a hunger swarm might soon be expected, and therefore to prevent so undesirable a result, I provided the hive with my last spare comb, and removed it to another apiary a mile distant, where the persecutors of the inmates would have little chance of finding it.

Since its removal they have manifested great activity, and now that their foes have found that no spoil can be extracted from the vacated stance, these are wisely betaking themselves to legitimate labour.

Had it been earlier in the season I might have resorted to a remedy which in another instance of the kind was found successful—viz., to shut up the plundering hive one day and the plundered hive the next, continuing the practice for a week or longer; but in May every day is precious, and I was unwilling to retard the progress of either hive by causing a suspension of out-door work on alternate days for even a short period.—R. S.

"WHY DID YE DIE?"

On visiting the apiary of a friend in the county of Dublin this week, I was much disappointed to find that four very fine stocks were completely uninhabited, every bee in them having died. When I say fine stocks, I mean they were so at the commencement of last winter when the autumnal feeding ceased. At that period nothing could have been more prosperous than their condition, both as regards population and winter stores of feeding. All seemed to go on well during the winter, and at the opening of spring they each showed the usual symptoms of health and prosperity. Food in moderate supplies was then given to them, consisting of liquid honey and sugar and barleysugar made exactly as directed by Payne in his book on bees. My friend thinks the latter was the cause of the disaster, and that the bees were poisoned by the vinegar contained in it. Such, however, is not my opinion, though I confess I am puzzled to account for the sudden and rapid mortality which took place.

On opening and examining one of the hives, the appearance at first did not strike me as extraordinary, a fair quantity of honey in a perfectly pure state was still in store; there was no sealed brood-comb, but a number of brood-cells were open, and occupied by young bees, which had apparently come to perfection. From the latter, and also from a number of old dead bees clogged between the combs, a most offensive smell was perceptible, very much like stale salt fish. I also observed a white mouldy spot here and there, from which the odour I have described emanated strongly.

What do you consider the probable cause of the disaster? A stock of Ligurians adjoining the others are in a most flourishing condition; they had no barleysugar.—Squib, *Co. Kildare.*

[We do not believe the bees were injured by the barley-sugar, and should refer the offensive smell and spots of mould to the effects of decomposition after death. All the appearances you detail point to the conclusion that the stocks perished from cold and starvation, although how this could take place when the hives contained a fair quantity of pure honey appears almost inexplicable. We believe the fact to be, that the vitality of bees frequently recedes to a low ebb towards the end of winter, and in this way they often at that time succumb to a degree of cold which would have done no harm whatever at an earlier period, whilst the remaining stores of honey were probably in remote parts of the hives, which in their enfeebled condition they were unable to reach. We do not recognise in your description any symptoms of foul brood, and should not, therefore, be afraid to make use of the empty combs after picking out all the defunct bees and larvæ.]

THE GERMAN CENTRIFUGAL MACHINE.

FOR EXTRACTING HONEY FROM THE COMBS WITHOUT INJURING THEM.

Concerning this invention of Major von Krushka we find the following in "The American Bee Gazette." "M. Rouvel says, 'The whole secret is in making use of centrifugal force. The honeycomb is laid upon a wire sieve hanging in a funnel whose outlet is closed by a cork. The funnel has a handle or bail (like that of a pail or kettle), to which is attached a rope, by which it is swung round and round in horizontal circles; and after a short time the honey, if it is not too thick or crystallised, can be drawn off out of the funnel perfectly clear and free from particles of wax or pollen. For operations on a larger scale a stationary apparatus with wheels for motive power is needed; but for single combs any one can construct his own rotary hand apparatus.'"

Major Von Krushka explained his "Honeycomb-emptying Machine" at the meeting of apiarians at Brünn as follows:—"The whole matter is very simple; reminds one of the 'egg of Columbus,' and is founded upon the use of centrifugal force. You can convince yourselves very easily of this by trying the experiment on a small scale. Take a wire pipe-cover, place in it a little piece of unsealed honeycomb, tie a string to it, swing it round and round in horizontal circles, and you will see that the honey is very easily expelled from the comb. Founded upon this idea, I have constructed an apparatus which affords the most satisfactory results, and offers many advantages to those who obtain honey in large quantities. Among these advantages are—purity of the honey, facility in obtaining it, and complete preservation of the combs, which are often of such exceeding value to the apiarian.

"To give a general idea of this machine, imagine to yourselves a horizontal disc put in rotary motion by a wheel. Upon the edge of this disc are eight small uprights surrounded or connected by a wire sieve, and thus forming an octagon upon the disc. If you now hang the unsealed combs with their frames between these uprights on the inside of this wire octagon, and put the disc in motion, so as to make about six revolutions per second, the combs will be emptied in one or two minutes. The honey is caught in a circular tub surrounding the disc, and is drawn off at the bottom. With such a machine a labourer can easily empty in a day from 8 to 10 cwt. of unsealed combs, which by continuing the rotary motion long enough are emptied so thoroughly that they appear *perfectly dry*. The honey is much purer than that obtained by the usual cold process; has no pollen or other extraneous particles mixed up with it, and, therefore, keeps much better. An essential condition for the successful operation is a temperature of not less than 20° Réaumur (77° Fahrenheit); at a less degree the honey would be too thick, and the wax, especially new white wax, too brittle."

Herr Knoze in describing the advantages of this apparatus, declares that he *hopes* that the honey-harvest will be considerably increased, as the bees will have less to build and more cells to fill; he *knows* that dealers prefer honey thus obtained on account of its greater purity and clearness; and *believes* that it will take the bees less time to fill three empty combs than to build one new comb.

OUR LETTER BOX.

Making a Hen Broody (*F. H. M.*).—No kind of food renders a hen broody. A hen of any sitting variety will not be broody until she has laid her clutch of eggs. If you kept two or three Cochin-China hens you would rarely be without one wishing to sit at this time of the year.

Hens Eating their Eggs (*Trotters*).—When hens have taken to eating their eggs it is very difficult to cure them. They begin because they want the shell; they keep on because they like the flavour, especially the yolk. The only thing that seems to check them is to put some of the composition eggs that are hard as marble in their nests. We have done so, and have many times, when we had a pen inclined to eat their own produce, rolled one of these in their way, or put one in their nests. They peck and peck with redoubled force; they turn them over and over, and try all in their power, till they are weary and give it up. This is not always a cure, but it seldom fails.

Pairing Canaries—Chickens Dead in the Shelle (*Idem*).—It is not too late to pair Canaries. Your chickens die from lack of moisture. The eggs should be well sprinkled with water for a week before they hatch. If you neglect this you will always lose chickens.

Game Cock's Tail Pulled Out (*G. R. Smith*).—It will take at least nine or ten weeks for the cock to get his tail. Few birds begin moulting till July.

Hen with a Brood Laying (*H. W.*).—It is not an uncommon occurrence for a hen to lay whilst her brood, a month old, are with her. We once had a hen which laid and sat before her previous brood had left her. At night they rested in a circle round her nest. "Cocks' eggs," whether round or oval, are merely abortive products of some hen or pullet.

Blisters on Chickens (*E. F. W.*).—Your dietary scale is not good enough. We cannot say that the bread and water diet causes the bladders or swellings, but it is poor food, and poverty may have to do with the disorder. We feed our chickens on curd, bruised corn, chopped egg, bread and beer, and meat scraps chopped fine. "All is fish that comes to net" in the way of food for chickens; and with them, as with human beings, a change is desirable. We had a few cases like those you mention last year, and most of them recovered. Those, however, that we tried to treat all died, especially those we punctured.

Colour of Game Hens' Combs (*Idem*).—Game hens should have well-serrated, straight, and red combs. There are, however, some breeds that have lead-coloured combs, and they are correct.

Pheasants Roupy (*P. P.*).—Remove them to a fresh spot where they can have plenty of grass. Give immediately a pill of camphor the size of a pea. Repeat it in eight or ten hours. If the eyes are swollen and closed, wash them with cold water and vinegar. Feed sparingly on stale bread steeped in strong old ale.

Churn.—*An Old Subscriber* wishes to know which is the best churn to make from 2 to 12 lbs. of butter. We shall be obliged by some of our readers stating their experience on the subject.

Error.—Page 302, col. 2, line 29 from bottom, for "Bark" read "Dark."

Bees in Neighbour's Hive not Working in a Super (*G. J.*).—We do not see what more you can do to induce your bees to ascend unless you pour a little liquid honey into the guide-comb. Little time, however, is yet lost, since honey-gathering is at present quite at a stand. When warm weather returns your bees may possibly take heart and set to work in right earnest. The queen is certainly not dead. In driving bees, the queen (as well as the bees themselves), is so frightened by the continued rapping that she forsakes her own well-furnished but inverted dwelling, and runs for refuge into the empty one which is temporarily placed over it. If you peruse the very lucid and full description of the whole process which appeared in No. 139, we think you can scarcely fail clearly to understand it; and you may, if you please, transfer your bees to a frame hive in the manner described in page 319 of our present volume.

Bees Destroying Drone Brood (*An Isle of Wight Subscriber*).—This wholesale destruction of drone brood is owing to the recent unfavourable change in the weather, which probably became perceptible to the bees a day or two before you noticed it. The inhabitants of your Nutt's hive, which is doubtless made of wood, may also be on this account more susceptible to changes of temperature than those of the other hives. This reply is applicable to the case of "G. H.," but who, in addition, says that the bees are killing the adult drones.

WEEKLY CALENDAR.

Day of Month	Day of Week	MAY 30—JUNE 5, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock after Sun. m. s.	Day of Year.
30	Th	Ascension. Holy Thursday.	67.9	44.7	56.3	16	52 af 3	2 af 8	25 af 2	50 af 3	26	2 48	150
31	F		69.1	44.9	57.0	15	52 3	3 8	56 2	7 5	27	2 40	151
1	S	Royal Horticultural Society, Show and	67.9	44.0	56.0	14	51 3	4 8	32 3	24 6	28	2 31	152
2	Sun	Sunday after Ascension. [Promenade.	68.2	45.2	56.7	18	50 3	5 8	14 4	38 7	●	2 22	153
3	M	Meeting of Entomological Society.	69.0	44.2	56.6	19	49 3	6 8	5 5	46 8	1	2 12	154
4	Tu	Royal Horticultural Society's Great	69.3	44.5	56.9	14	49 3	7 8	5 6	45 9	2	2 2	155
5	W	[Show opens.	70.3	47.3	59.1	22	48 3	8 8	13 7	35 10	3	1 52	156

From observations taken near London during the last forty years, the average day temperature of the week is 68.9°; and its night temperature 49.7°. The greatest heat was 85°, on the 3rd, 1846; and the lowest cold 32°, on the 31st, 1857. The greatest fall of rain was 0.90 inch.

ISOLATED PLANTS IN FLOWER GARDENS.

I CANNOT tell whether or no any great changes have been developing since last autumn in the pits and propagating-houses of the "upper ten" of the gardening world, but I am inclined to believe that there has already set in a decided reaction favourable to the introduction of softer and more graceful features into our system of flower-garden decoration.

For several years rumours of dissatisfaction have been afloat with regard to our present style, some of them faint and half-regretful, like the first indications of the breaking up of an old love, others degenerating into sarcasm as to the greater cheapness and adaptability of red lead, yellow ochre, and various pigments, for the purpose of colouring our beds; then come the epithets "Dutch formality," "Chineseism," "patchwork," &c., with which we are now so familiar, all indicating that the taste for the geometrical arrangement of great expanses of mere colour is on the wane. This, though not to be wondered at, is yet cause for regret; for although masses of hard unbending colour are not pleasant to look at, be they produced by what they may, yet when relieved, as they always are in gardens, by more or less of green foliage, and when in the arrangement of the colours due respect is paid to the few but important laws of harmony and contrast, then a well-designed geometrical flower garden, even though wanting in individual forms of gracefulness, will still be "a thing of beauty and a joy," if not "for ever," at least for four months or more in the year.

The adoption of fine-foliaged plants in what is called the sub-tropical style is a great move in the right direction, but having had no experience in the matter, I am, in consequence, totally unfit to say anything about it; only this much must be obvious to every one—that in half the places throughout Scotland and the north of England it would be something very near akin to madness to plant out such subjects as Dracænas, Caladiums, Ferdinandas (how it would rejoice our cold northern hearts to be able to grow a Calabash!), most of the Cannas, and many of the larger-leaved varieties of the Castor-oil plant, not to mention many other plants even more fragile which were last season used with such effect in Battersea Park and elsewhere.

Much, however, may be done in taking away the somewhat wearisome tameness of our present system by the more extensive use of isolated specimens of hardier and commoner plants, care being exercised that these do not, either by their size or proximity, overpower the beds, and thus more than neutralise the effects they are intended to produce. For this purpose some of the larger ornamental Grasses are pre-eminently adapted, and not the least so is the old unfashionable Arundo donax versicolor, which in rich soils attains a considerable height. Arundo conspicua is also a very remarkable object on an open lawn; it is a recent introduction, and well worth growing. Erianthus Ravennæ, a most ornamental Grass with large plumes of pure white inflorescence, grows to the height of 4 or 5 feet. Then there is that prince of all the Grasses, Gynerium argenteum (the Pampas Grass), than which, when well grown in single plants, nothing can be more elegant; but if grown in a small flower garden where there is no very heavy background of trees or shrubs it should not be allowed to flower, as its mammoth spikes seem to dwarf everything in its neighbourhood.

The time-tried Humea is also of much value in this way, as it can endure a great amount of wind, if well secured to a neat tapering stake up to within a few inches of the top.

Coronilla glauca variegata, grown pyramid fashion in pots and plunged in any part that requires to be lighted up, has a very fine effect. It is one of the easiest of all plants to grow, and makes also a very neat edging for beds; I have several times used it as such in a small way.

Other two plants, very different from those last mentioned, yet having a grace of habit peculiarly their own, are the Agave americana and Yucca gloriosa, both so well known and much used that little need be said about them. The first may be grown to a considerable size in small pots, which are easily plunged to the rim in lawns, being careful to make the hole deep enough to admit of another smaller pot being inverted in the bottom as a safeguard against stagnant water and worms. The Yucca may also be made portable by being kept in large pots where annual re-arrangements are desirable, but succeeds best when planted out in any soil that is dry and deep. In winter the heart of the plant should be protected by tying up the outer leaves, a few Spruce branches being placed round them in very severe weather. Although Yucca gloriosa is the species most frequently met with, there are many other Yuccas worthy of a place in the flower garden, as Y. obliqua, acuminata, aloifolia, serrulata, draconis, superba, and several variegated varieties.

All who have grown greenhouse Fuchsias in a slovenly manner, and there are very few who have not done so at some time, must have noticed how easy it is to bring them into the form of standards, a little neglect at first and a little timely pinching afterwards are nearly all that is required to make handsome plants for our present purpose. The stronger-growing old dark sorts do best, but some of the light are quite robust enough; for instance, Pearl of England and Venus de Medici. Unfortunately all of them are easily damaged by wind, so that for places entirely exposed to the west and south they are not very well adapted. I once tried a pair of them on wire umbrella trellises, but could not compliment myself on their appearance.

The plants I have named, it will be seen, are all of secondary importance in themselves, but fitted by elegance of form to remove to some extent that rather stiff appearance so much complained of. Some people say that at the

present day a want need only be felt and expressed to be in a very short time supplied; so I would hope that some day soon our nurserymen will put their catalogues through a process of expurgation, and clear a few pages for the reception of a list of plants as ornamental in form and foliage as those used in the London Parks last year, but requiring something a little less expensive than a stove for their winter quarters.—Ayrshire Gardener.

THE GARDEN OF THE PARIS UNIVERSAL EXHIBITION.

That portion of the park surrounding the Exhibition building which has been assigned as a garden for the display of objects connected with horticulture, lies adjacent to and parallel with the École Militaire. The visitor, therefore, who arrives by the bridge of Jena and enters thus by the Grand Avenue into the building, has to traverse its entire length in the same straight line until he finds himself in the park beyond. Passing through some sections on his left, devoted to Flanders and Brabant, he speedily reaches the garden itself, which is enclosed by iron railings of various patterns. Here he will have to pay an extra half franc, which covers all other expenses in this part.

To obtain a general view of the whole garden many ascend the artificial mound in the central portion, on which a handsome iron and glass structure, of great height and with curved outlines, has been raised. This is styled the "Serre Monumentale," and its exterior is efficiently covered with blinds composed of thin round strips of wood of the thickness of a quill, painted in alternate stripes of dull green and white, and which effectually exclude the sun's rays. The interior is as yet unfinished; a fantastic portico will serve for many purposes in the future. It is difficult, however, to imagine the practical purposes which this really handsome house could serve. It may, however, be an advertisement for the constructor. There have been few plants within it, and, with the exception of some fine pyramidal Azaleas, shown by Messrs. Veitch, nothing which the other houses could not have held is exhibited there. A good general idea of the plan and of the effect of the whole scene is obtained from this point of view. With a true conception of the nature of their object our neighbours laboured to raise here a central semicircular mound which dominates the ground. As this is the old review ground of the Paris garrison, it may again serve for some military purpose. An artificial valley is thus formed, and the ground, rising gradually towards the arc of the semicircle, forms an agreeable slope all round. This has been planted with large trees; and these, now in leaf, mask the buildings in the streets, and concentrate the effect within its sphere. Considering that the ground (the Champ de Mars), was a dead level, what has been effected merits the warmest praise, and is a decided addition to the Exhibition.

In front of the Serre Monumentale spreads the "lac," of course of no great size, and other pools diverging on each hand continue the effect of the water. They are small—too small in fact, and the imitation rustic bridges, which were needed for communication, might have been more pretending. Gay flower-beds are formed in the thriving turf, but the French do not excel in the art of bedding-out. Indeed, these beds, labelled and placed under painted canvas pavilions, are but so many advertisements of French seedsmen, and are meagre and ineffective in themselves. In this portion one misses the English taste, which has done so much in geometrical flower-beds. The depreciators of bedding-out, as now practised, could not, however, like these mixed beds.

The great attractions in the garden are the two aquaria. That for salt water is unfinished; but the fresh-water aquarium is perfect, and much frequented. A waterfall passes over the summit of the grotto under which the aquarium is constructed. The next attraction is the pavilion, in which some magnificent band plays each afternoon. Behind the pavilion is the section reserved for the fruit trees, and near it is the stove wherein were the plants with which Messrs. Linden and Veitch contended for floral honours. On the other side of the pavilion is a restaurant, evidently an important "*concession*." It displays the Imperial banner, whose field, thickly strewn with the Imperial emblem, carries a golden eagle in the centre. Below, the incessant stream of people proves how fashionable the garden is likely to be. As with us, music, no doubt, contributes largely to its attractions, and the strains of the band of the Guides now invite a descent from the Serre Monumentale towards the pavilion. The slopes of the ground are well clothed with healthy young trees and shrubs, all carefully labelled, and worthy of examination. Many old favourites and some new plants are here luxuriating in the rich black soil. Lower down, and at the base of the mound, are the French horticultural implements. Some of these are by no means unworthy of examination, and are commendable for cheapness.

Following the crowd (no bad course after all), we arrive at the fresh-water aquarium, constructed with immense labour and on a large scale. It is divided into compartments in the artificial grotto, and the fishes, among which are descendants of the famed carp from Fontainebleau, which were originally placed there by Francis I., are seen floating at the level of the spectator's head. Other varieties are visible in the remaining compartments. This aquarium is a very great source of pleasure to the Parisians. Little can be learnt, of course, even by repeated visits, of the habits of the fishes. This requires long observation, and what the salt-water aquarium can teach is to us, dwellers on the seashore and fishermen, a marvel! The aquaria, however, serve their purpose well, and possibly they will create a taste for such instructive pursuits, and thus the object in view will be realised. In this sense the whole Exhibition is wonderfully interesting, and is certainly well calculated to succeed. The grotto itself is a beautiful artificial cave, and it would be a pity not to preserve it. One can imagine that rare effects could be produced here by moonlight, or by coloured illuminations. On the summit is a large burnished globe, wherein, by shifting one's ground, a view of the whole garden is gradually obtained, including a portrait of the spectator himself, with his head curiously and somewhat alarmingly foreshortened, as we see in caricatures.

All this time the echoes of the band of the Guides have been luring our not-unwilling steps toward the orchestral pavilion, and from here, too, an artist would select a stand-point to photograph or sketch (were it allowed), the scene. Under the shade are many of those very convenient iron chairs, so common in Paris, filled with listeners. Crowds appear and are lost in the windings of the slopes blooming with Rhododendrons. They wind past the miniature lakes, cross the tiny bridges, and ascend laughing to the seats near us. Strangely enough, not a shadow of any national costume is to be seen. You may hear close to you Russian, Swedish, Roumanian, or any other language (far more readily recognised than many think), but the utterers themselves, men or women, are unrecognisable as to dress—not that they are aristocrats; far from this, the mass appears to be of the middle class, or even of a lower grade. After a time the eye distinguishes national peculiarities, of feature especially; but, at first sight, what difference is there between one foreigner and another as to dress? Are they not all equally strange to, and all unlike us in this respect? There is one great delusion which this international meeting dissipates, and that is, that educated people differ essentially wherever they may be. National costumes are fast disappearing. The figures representing such in the building, though of high finish, serve only to excite the hilarity of the crowd. You pay two sous for your chair, and repeat this at every move, and it is wonderful how often this is done. From here, close to the Empress's Pavilion—another "*concession*," and covered with the names of the tradesmen selected—the view is charming and characteristic. One regrets that the garden was not of larger extent, so artistically has it been laid out, and so fashionable has it become. There are here few of the hybrid kiosques, or sham mosques, which abound in the park, and the eye finds repose in the fresh green of the turf and the bloom of the flowers around, while the distant hum of Paris reminds the visitor that he can, by a few yards of movement, regain the crowded streets, or return to the bewildering riches of the Great Show.

The police of the garden is paternally administered by members of the old Garde Municipale. Very polite are they, and strangers should always consult them or the sergents de ville when in any doubt—not, however, if they really wish to approach any of the crowned heads who visit the Exhibition, unless it be to do exactly the reverse of what they advise you to do.

Those who expect to see a good display of fruit and vegetables will be disappointed, unless autumn greatly change the character of the Show. As usual, our neighbours trust wholly to their fine climate, and neglect artificial aids for maturing fruits. The results are visible in nine mean and small Peaches and six Nectarines, shown about the middle of this month. Some Calville Apples and Uvedale's St. Germain Pears made up the rest.

What the autumn may produce will, no doubt, be much superior, though here, as in London, there is much the same indifference on the part of cultivators. Intending English exhibitors might, therefore, reflect with advantage before they be at the pains of forwarding any fruits. Few natives exhibit, and very few spectators visit the sheds devoted to these classes, which are readily discovered by those who wish it.

Taken as a whole, what is exhibited in the garden represents in no adequate measure the state of horticultural progress in France. With the exception of the tools and implements there are no evidences of other horticultural materials worthy of note. Ground vineries we find, together with Saynor's splendid pruning instruments, in the English Agricultural Annexe; but these seem not to attract the natives. In fact, it must be said our neighbours think their own ideas equal to most emergencies, and in the case of gardening not the least of all.

Visitors having time should go to the City of Paris establishment at La Muette, Passy, which I went over with much satisfaction. From here the flower-beds in the park of Monceaux and other parts are supplied, and the glass houses of the Exhibition garden are finally to be re-erected at La Muette. The flower market, near the Madeleine, is also really worth a passing visit, and furnishes some hints in the arrangement of bouquets.—T. C. Bréhaut.

SPRING FLOWERS.

One receives so much interesting information in the pages of this Journal from the writings of amateurs, that, imperfect in exact knowledge as such contributions generally are, I feel bound to add what I can to the general stock.

I have been trying a spring garden this year, according to the fashion, and some memoranda, made for my own use, may be of service to others.

In the first place, is it worth the trouble? The effect is slight compared with the gorgeous colours of summer, and the beauty fleeting. On the other hand, there is a delicacy of their own in the hues of spring; and the little care and labour involved in comparison with what is needed for a summer garden, have made me determine never again to look for six months of the year upon rough brown beds of earth, which serve in their desolation to remind you more forcibly than anything else that summer is gone. If these naked beds are clothed with colour of any kind, so long as it be not that of coloured earths, a great deal is gained. Then the trouble is slight. To protect winter plants in the summer months does not require literally one-tenth of the labour, nor one-twentieth of the expense, necessary to keep summer plants through the winter. Some corner of the kitchen garden, rather shaded from the sun, will hold all the stock you require, and one touch or two at the right season (in these four words lies all the difficulty), will keep your laid-by winter dress in perfect order. The little attendance required must, however, be given to each plant at its proper season. The seed-sowing is not to be done all at once. It is provoking to find in November, instead of a sturdy little plant compact enough to bid defiance to the frost, a loose expanding creature, just beginning with a too-confiding tenderness to open its blossoms to the first blasts of winter. Then bulbs with withering leaves are uninteresting, and are apt to miss the one watering they require, or to be left in the ground a prey to mice and slugs. The patch of reserve garden, therefore, should not be altogether out of sight.

The best plants are those that bloom the earliest. Many annuals, such as Collinsia, &c., are very beautiful; but they trench upon the summer season, and make the gardener impatient to be rid of them even at their prime. In this respect Daisies and Pansies, both hardy, and both easily divided and easily moved, carry off the palm. One of the prettiest beds was a blue Pansy, obtained from Messrs. E. G. Henderson and Son, with a ring of Golden-leaved Daisy round it, and an outer ring of Crocus La Majesteuse; the Daisies 10 inches from the edge, that they may not be smothered by the Crocus leaves, and the whole bed raised much higher than in summer time to show-off the low-growing plants. The Pansies were in blossom before Christmas, and came into bloom again with the rapidity of an Alpine Gentian as soon as the snow melted, and their bright blue, now, it must be confessed, fading into a duller colour under hotter sunbeams, was a most pleasing contrast to the yellow leaves and crimson flowers of the Daisy.

Another striking Pansy is the Magpie, free blooming, but later than the other, and somewhat melancholy in effect; a French nurseryman would have named it Deuil d'un Prince. It requires a crimson Daisy round it. The yellow Pansy blooms nearly as early as the blue, and makes another good bed, with a ring of Aubrietia.

The Aubrietia likewise flowers early, and its mauve colours are well contrasted with a ring of white Daisies. When removed it shrivels up in the heat of summer, but revives with the autumn rains. A still greater favourite is Phlox verna, which forms a close carpet of delicate lilac, with the same white edging round it. Let me confess that I made the mistake of setting a crimson Daisy near it. How quickly one detects the mistake when the first flower opens. Its only fault is that in winter its foliage is brown and sere, and it is not so well fitted for a bed close under the eye. These beds six weeks ago were gay with Tulips, which went out of blossom before the Phlox opened. I have tried the same plan with Hyacinths, blooming them in beds of Silene, Forget-me-not, and Limnanthes, the leaves of which afforded an excellent foil to their flowers, and which are now hiding with their own bloom the leaves of the Hyacinths. Bulbs flourish in a dry soil so well that single Hyacinths bloom with us and increase year after year. The Silene, however, grows so tall as almost to smother the leaves, and I will not answer for their bloom next year. Not so the Forget-me-not. With this last, seedling yellow Alyssum makes an excellent contrast of exactly the same height, and exactly contemporaneous in bloom, only do not plant it where you look to a brighter field of Buttercups beyond it.

The three annuals above mentioned give little trouble, and will seed themselves if a few plants be put in a shrubbery. The green Fern-like leaves of the Limnanthes compensate for the lateness of its flowers. No manure should be dug in with annuals at the time of planting. Arabis variegata looks well in mid-winter; but all white flowers, even Hyacinths, are cold in spring.

The Anemone has failed more or less for two years; first, I believe because the tubers were kept for some months out of the ground; afterwards, because they were put in too soon, and the too vigorous plants were injured by the snow. Yellow Wallflower, sown early, makes a good ribbon-border with Magpie Pansy, which is rather tall, in front of it.

Every bed should have Crocus round it, which need not be removed in summer, as it will not be in the way of bedding plants. There should be some system in the colours, the yellow being kept in due subordination to the purples and the lighter colours. La Majesteuse, Sir John Franklin, Queen Victoria, and Sir Walter Scott are all good, and distinct.

By the means which I have described three successive periods of colour are insured—1st, the Crocus season; 2nd, that of Hyacinths and Tulips, with which Pansies and Daisies mingle; 3rd, the annuals.

I need scarcely add that I have been indebted to Mr. Fleming's little book on spring gardening, in which full directions for the management and propagation of spring plants may be found, for the pleasure I have received.—Wyesime.

VIOLA CORNUTA.

Some time ago there was an interesting controversy in the pages of the Journal, as to the respective merits of what were said to be two varieties of Viola cornuta. All parties, however, seemed to agree that the plant was one that would rank high in public estimation when it became sufficiently known and cultivated. It is not my purpose to reopen that controversy, which I imagine, after all, arose simply from the plants having been grown in different soils or circumstances, the effect of which, as we know, is often to give another tint to the colour of the flowers, or to cause some alteration in the character of plants. Be this as it may, I can bear testimony to the very gay appearance which the plant has at the present time, and if the continuance of its blooming be satisfactory, its merits as a bedding plant will be fully established.

Mr. Wills, through whose exertions this old-fashioned Viola has been restored to favour, was kind enough to send me some plants in the autumn of 1865. I kept them in a cold frame all the winter, and planted them out last spring, but unfortunately I happened to place them in a spot to which rabbits had access, and the result was, that the flowers were nipped off as produced, the plants escaping untouched. They have now acquired a breadth and compactness which could not well be excelled. Having recently planted many young Pinuses and other trees on the lawn in cultivated circular beds about 6 feet

in diameter, I put in a ring of Viola cornuta as an edging to some of these, as well as several other hardy plants remarkable for their compact growth, their foliage, or flowers. Arabis purpurea, and the dwarf variety of Alyssum saxatile, have been very ornamental, but are rather past their best, while Viola cornuta certainly promises to be more lasting, and at present (May 20th) is the gayest plant of its class. If it continue as it now is, too much cannot be said in its favour. Judging from its appearance, I should be inclined to think it will suit the north of England, or cool, moist situations better than dry, sunny ones, and I fear mildew will attack it in dry seasons, and on dry sandy or gravelly soils. This, however, I only put forth as an opinion, and shall be glad if my anticipation prove erroneous. I have no doubt that the merits of the plant will be fully tried this season, in widely different situations.—J. Robson.

LILAC-TIDE.

By such a name I designate one little period of the year, a short period, for the Lilac soon sheds its beautiful flowers; soon are they faded by the sun, then embrowned by it, and at length they hang withered bunches on the trees.

But, although Lilac-tide is a very brief season—a mere parenthesis in the year—still, it is a most beautiful period, beautiful in rich possession, and beautiful in richer promise.

Take a few other periods. There is hay-time to wit; but after the hay is gathered the landscape is injured; not the bright green of Nature meets the eye, but the yellow green of art, for where the scythe has cut the luxuriant vegetation, there the tint has faded down to paleness, besides a considerable portion of the summer is gone with the hay.

Or, take harvest-time—man's rejoicing time, fields of corn ripe and ready, and rustling for the reaper's hand. As says Bloomfield—

> "A glorious harvest fills our eager sight,
> Half shocked, half waving in a flood of light."

But soon the fields will be cleared, and then they will lie naked and void, and we shall feel that another season is far on the wane, another milestone of time in sight, and soon to be reached and passed.

But, in Lilac-tide all is different; it is the beginning of the season's beauty, its youth, its hopeful youth; chilliness is gone, genial warmth is come, but no thought of decline mars our enjoyment by overshadowing the present; the birds are pealing forth their notes, warmed, but not hushed as presently they will be, by the heat, while the rooks are filling the air at intervals with their musical clangour.

As I sit writing with breeze and sound coming to me through the opened window, there lies before me a bunch of Lilacs of both colours, placed there by a child's hand. (Whose pleasure was the greater—the giver's or receiver's?) The white Lilac—so white—those unopened flower-buds, not pearly white, for no pearl ever equalled their whiteness; what a contrast to the broad green leaves! The Lilac leaf has a colour all its own, a dark yet clear and even greenness throughout. Then, there is the other Lilac—the Lilac proper—the commoner and stronger-growing variety, it has a colour in nature to itself, giving a name to a certain hue. But although cut Lilac is pleasing to the eye, yet commend me to the flowers on the tree. Horace Walpole was wont to hurry down from London to Strawberry Hill to enjoy Lilac-tide, and verily if I must pass the whole year

> In populous city pent,"

still let there be a reservation as to Lilac-tide, for I must be in the country then.

Surely, when Londoners, if not Londoners born, see the draught horses come into town with branches of blooming Lilac nodding and bowing on their heads, they must long and pine, and "weary," as the Scotch say, for the pure, pure country air, where the Lilac trees are standing in unsmoked beauty. And yet, happy London, with its pretty suburbs improved by the gardening art of centuries, beauty, country beauty, is close to you. Go out westward, weary citizen, and the country will soon meet you—pretty villas, with bright green lawns, trim flower-beds, and Lilac trees all in bloom. Go further, and pause at the gates of many a country house overlooking the broad Thames, and see how art and nature together have produced a glorious English garden.

But, it is not near London, no nor in Wilts, nor even near the fair city of the west, beautiful Bath, that you can fully enjoy Lilac-tide. You must go further west, to warm, green Devon, for a perfect spring. There the air is soft, and "winter lingers not in the lap of spring." There you may wander out on early summer evenings, yea, even sit out as you dare not in any other part of England. There the grass is greener, and the leaves more fully out in April than in any other county, and there the Lilacs bloom in fuller, richer beauty than in any other part of our island home.

Miss Eden in her interesting book on India, "Up the Country," tells us we enjoy nature most, but remember art the longest; that of a day spent in the country, even in its fullest beauty, the mind retains nothing distinct, that the beauty of a landscape leaves but a haze on the memory, while on the contrary a fine painting remains for ever engraven in all clearness on the mind. We remember, too, the day, the hour, the attendant circumstances, and the picture itself stands out before us bright and clear, and as we saw it once we see it always. I doubt this. There are days and scenes which never fade from our memories, but are photographed on the brain, and precious memories they are to us, and sure brighteners of after-life. I can close my eyes and see the flower, or the landscape, as clearly as I can that Carlo Dolci which I saw years ago in its green-silk-hung little room at Burleigh, and of both nature and art I can say—

> "Those beauteous forms,
> Through a long absence, have not been to me
> As is a landscape to a blind man's eye.
> But oft, in lonely rooms, and 'mid the din
> Of towns and cities, I have owed to them,
> In hours of weariness, sensations sweet,
> Felt in the blood, and felt along the heart."

But, to return to Devonshire, as the very land of spring floral beauty. Not only in South Devon, where the Myrtle blooms in the open air, but in North Devon (nearly as lovely, and with a fresher air, where many can enjoy life who are almost stifled by the soft air of the south), is springtide to be seen in full perfection. Perhaps some of my readers know Bideford, a famous port in the old Armada days, and although it is a humble place now as to shipping, yet it is a bright, dry, pleasant-looking town, as the old song says—

> "Bideford is a pretty place, it smiles where it stands."

Well, after watching, some years ago, from its many-arched bridge the catching of a fine salmon, I, house-hunting for a friend, ascended a hill near, where a residence was to be let, and found an old—scarce mansion, scarce cottage—but something between the two. A heavy shower had just fallen as I entered the gate, a shower which had pelted the ground and pattered on the new green leaves, and the grateful earth was sending up an incense-like smell, and as to the flowers—

> "Their breath was mixed with fresh odours, sent
> From the turf, like the voice and the instrument."

Proceeding, I beheld a wavy line of Lilac trees in full bloom; a wavy line of Lilac trees hanging over the approach. Each tree was shaking off in the sunshine the recently-fallen shower-drops. Such a show of Devon-blossoming Lilac, the like of which I had never seen before.

> "Lilacs various in array, now white, now sanguine."

A group of laughing girls had taken refuge from the storm, in the porch of this old house, and were now essaying to escape on tiptoe along the gravel path.

And when Lilac-tide comes round each year, I think of that scene, the clean west country town, the bright clear bay, the Bristol Channel glittering in the sun, and Lundy Island standing up above the sea as an oval-shaped jewel stands from a ring; it looked in the pure atmosphere like some fairy land, some home for beings, perhaps little children, too pure and innocent for mixing with the throng in this tainted world; and, then, last of all—and longest of all—I think of the blooming Lilacs, bending their beautiful heads, wet and perfumed, in the sunshine.—Wiltshire Rector.

THE APPLE CROP OF 1867.

From information which has reached me from various parts of Kent and Sussex, there appears to be an apprehension of a great falling off in the Apple crop of the ensuing autumn, owing to the late severe winter, which has caused so many abortive blooms, and this idea will be strengthened by the occurrence of the severe frosts and biting winds of the past fortnight, which have made havoc of and sadly disfigured the young growth of nearly everything exposed to them, as well as of the Apple bloom. On examination, however, of the orchard under my

own charge and of those in the immediate neighbourhood, I do not apprehend such serious consequences as the first appearance might indicate. In the first place, there has been a profusion of healthy expanded bloom on both old and young trees of early and late varieties, which are set very freely, and if one-sixth of the fruit swell-off there will be a good crop of kitchen sorts, and an average one of dessert kinds.

How fare others in different localities? I registered 5° of frost on the morning of the 15th, and 3° on the 16th inst. Pears, Cherries, and Plums promise abundantly.—Thomas Record, *Hawkhurst, Kent.*

ROYAL HORTICULTURAL SOCIETY.

Floral Committee.—*May 21st.*—Although the Meeting this day was specially dedicated to the examination of variegated Zonal Pelargoniums, several plants of great beauty and interest were exhibited. The following awards were made:—Messrs. Veitch exhibited a large collection of new plants, of which Dichorisandra mosaica, a beautiful-foliaged plant, had a first-class certificate, Dichorisandra undata one of the second-class, Adiantum variety of concinnum a first-class certificate, Dracæna regina a first-class certificate. Dendrobium MacCarthiæ and D. Parishii had both been awarded first-class certificates two years ago. A special certificate was awarded for a beautifully-grown specimen of Anthurium Scherzerianum with the largest scarlet spathee yet seen. Messrs. Veitch also exhibited Echites rubro-venosa, Taxus hibernica fastigiata, an Aralia, and a new bedding plant, Irva sanguinolenta, with dark reddish purple foliage. Mr. Bull exhibited several new plants, of which Anthurium regale had a first-class certificate, Zamia villosa a first-class certificate, Dichorisandra mosaica a first-class certificate, and D. undata a second-class certificate. Seedling Zonal Pelargonium Valiant, and a basket of well-arranged Zonal Pelargoniums in small pots were also shown by the same exhibitor. Messrs. Backhouse sent an Orchid rarely seen in flower, Oncidium nubigenum. Mr. Williams, Holloway, sent small plants of Athyrium Filix-fœmina plumosum grandiflorum, an Adiantum, a seedling from Farleyense, and Gymnogramma Steltzneriana, with very little colour on the back of the frond; probably these plants were too young to develope their beauty.

Mr. Standish, Ascot, received a first-class certificate for Retinospora filifera; and Mr. Kinghorn a first-class for a very lovely Azalea called Lizzy, with pure white flowers with rosy purple flakes. The outline and substance of the flower and petals were perfect. This will be found one of the best in the section of the white Azaleas. He also sent Azalea Conspicua, bright rose, but no advance on others. Messrs. Osborn, Fulham, sent a collection of cut flowers, which in the hurry of the meeting were overlooked, and would have had a special certificate; also a singular form of Lomaria gibba var. Belli, raised from the spores of L. gibba: this variety received a first-class certificate in 1865. From the same firm came likewise a dwarf-growing plant of Osmunda regalis, to be named by Mr. Moore, and which received a first-class certificate; and Viola pedata, a very pretty plant with divided foliage. Mr. Green, gardener to W. Wilson Saunders, Esq., received a special certificate for a collection of plants; and W. W. Buller, Esq., a similar award for a collection of Orchids, consisting of beautiful Cattleyas and Dendrobiums. Messrs. Low, Clapton, had a special certificate for a collection of Cattleya citrina with exquisitely perfumed flowers, much resembling in size and colour the Daffodil. Mr. William Paul had a first-class certificate for Ulmus aurea, a very promising yellow-foliaged Elm. Messrs. E. G. Henderson sent Epigynium acuminatum, a very singular plant, the deep scarlet flowers being produced on the stem; it received a second-class certificate; also Ulmus aurea, which had a first-class certificate. Mr. Turner, Slough, contributed several fine seedling Pelargoniums of the large-flowering kinds. Example, a very beautiful flower, had a first-class certificate. Victor also received a first-class certificate; and Heirloom one of the second class. The others were Patrician and Leotard, and Fanny Geir and Excelsior, two Fancies.

We must now as well as we can give some account of the Tricolor Zonal Pelargoniums, or, as it has been suggested, Versicolor or Variegated Zonals. In this large collection from all parts of the kingdom, we need not be surprised that there was a great similarity, and hence the difficulty of making a selection of the best and most distinct. It would not be correct to say that they were all good, but a very great many were so. Mr. Turner received a first-class certificate for seedling Zonal Mrs. Turner; Messrs. E. G. Henderson had a first-class certificate for Sunshine; Messrs. Downie, Laird, & Laing a similar award for Nosegay Pelargoniums Countess of Rosslyn and Emmeline. Mr. W. Paul received first-class certificates for Nosegay Lilacinum and Versicolor Zonal Red Admiral. Mr. Wells had for Her Majesty, with a dark broad zone on a yellow ground, a first-class certificate, and a like award for Beauty of Ribblesdale. Mr. John Mann, Brentwood, exhibited a seedling Zonal, Lord Derby, the finest and largest scarlet yet produced, and having green foliage and a dark zone; it was awarded a first-class certificate; and Christabel, with bright rosy flowers received one of the second class. Mr. Wheatley, gardener to the Rev. R. Clive, sent a seedling Ivy-leaved Pelargonium Mrs. Clive, the leaves with pink margins, a very distinct variety, for which a first-class certificate was awarded. From Mr. Grieve came Victoria Regina, the brightest and most highly coloured Variegated Zonal yet seen; a first-class certificate was awarded. Messrs. F. & A. Smith, Dulwich, sent Magnificent—first-class certificate; Resplendent—first-class certificate; and Jetty Lacey—first-class certificate; Mr. Groom, Ipswich, Lord Stanley—first-class; Messrs. Saltmarsh, Sunrise—first-class, and Crown Jewel—first-class.

Medals were awarded to the exhibitors of collections as follows:—

Silver Flora to Messrs. E. G. Henderson, who exhibited their finest specimens of the best varieties in cultivation; the bright and vivid colouring of some of the varieties, such as Lady Cullum, Lucy Grieve, Sophia Cusack, Sophia Dumaresque, Italia Unita, &c., cannot be surpassed. The examples illustrating the first break into colour, the gradual process before the colour and character become fixed, the prognostics of a diseased or healthy growth, were very interesting and well defined by Messrs. Henderson.

Silver Flora to Mr. Wills. This collection, so well represented by the peculiar strain of which Beauty of Oulton is a type, was very extensive and superb.

Silver Flora to Mr. Grieve. This father of Tricolor Zonals, as he may very properly be styled, exhibited some extremely fine varieties, too many, indeed, for their names to be taken down as we could have desired to have done. The crowning work of skilful cross-breeding was well and nobly exemplified in his magnificent seedling Victoria Regina, which certainly stands the premier among Variegated Zonals.

Silver Flora to Messrs. Carter & Co. In this collection were some of the finest Tricolor Zonals yet seen; but as the rules of the Floral Committee forbid awards to be made to seedlings, several of these in this as well as in others were passed. There were some first-class varieties among them; when their character as to colour and habit shall have been fixed they will most assuredly stand high in the estimation of the admirers of these plants.

Silver Knightian Medal to Messrs. Smith, Dulwich. The collection sent by this firm was very excellent, and although the plants had suffered severely from the knife, and had not their usual fine and healthy foliage, their peculiar style and colouring were greatly admired, as the certificates awarded will testify.

Silver Knightian to Messrs. Garaway. Many beautiful varieties were to be found in this collection. Mrs. Allen was specially noticed for its great beauty, both in the colour and form of the leaf.

Silver Knightian to Messrs. Saltmarsh. A curious sport of a Fancy Pelargonium was exhibited in this collection, the white margin of the leaf being well and distinctly defined. Sunrise and Crown Jewel were certainly gems.

Bronze Flora to Mr. Groom. Lord Stanley is a most beautiful variety, rich in colour and marking. There were several other excellent kinds.

Bronze Flora to Messrs. Windebank & Kingsbury. This collection contained small plants, many of them yearlings, and of great promise.

Bronze Flora to Mons. Langlois, St. Heliers, Jersey, who exhibited some beautiful seedlings, but not sufficiently distinct from others in cultivation.

Several other collections were sent by Messrs. Chater, Watson, J. Aldred, Perkins, Wood & Ingram, and Maule & Sons, in each of which plants of great merit were to be seen.

The care taken to give the pedigree of seedlings reflects great credit upon the exhibitors, and will, without doubt, prove very useful to those who are commencing the interesting occupation of cross-breeding. The only regret that can be expressed on this occasion is that there was not more time for examining the plants. However, the Meeting was a great success, the forerunner, we trust, of another display of the Versicolors. Public thanks are due and will be voted *nem. con.* to those exhibitors who so kindly and liberally supported the Meeting. Such a sight had never been seen before.

Weekly Show, *May 25th.*—Prizes were offered for collections of Fancy Pelargoniums (Nurserymen); for miscellaneous plants (open); for Cape Heaths (open); for cut flowers arranged in a basket (open); and for the best exhibition of Vegetables (open). The cold weather of Saturday last prevented all but two exhibitors sending plants. A first prize was awarded to Messrs. Lucking Brothers, Bayswater, for a collection of twelve miscellaneous plants; and Mr. Morgan, Ball's Park, Hertford, gained a first prize for cut flowers in a basket. From the Society's Garden, Chiswick, an interesting collection of plants was exhibited, consisting of pot Roses, Calceolarias, Petunias, variegated Sedum, Gloxinias, Schizanthus, &c.

TRICOLOR PELARGONIUMS.

I am concerned that my remarks appear to have been misunderstood. If Mr. Grieve will give those remarks a second perusal, he will find that I carefully avoided any comparison of Mr. Basket's Rainbow with Mrs. Pollock as a Tricolor Pelargonium. It is in many points essentially different and inferior; also all the zone, brilliant as it is, is not permanent as summer advances; and, as I stated, I grow it for its noble truss of bloom only. As the parent of Burning Bush and other well-known handsome plants, I thought the fact of its early existence deserved notice. Again, Burning Bush as an earlier

production was the forerunner of Italia Unita, but I by no means asserted it to be the progenitor of that beautiful plant. —M., *Deptford.*

CRYSTAL PALACE SHOW.—May 25th.

It is certainly a fortunate circumstance that the dates fixed for the great horticultural London Shows are unusually late this season, for even the earliest, the Crystal Palace Show, held on Saturday last, not a month from midsummer, took place on a day as chilly and ungenial as any in this exceptionally cold season. There was, notwithstanding, a remarkably large attendance of visitors, of ladies especially, so much so that locomotion about the middle of the afternoon was a work of no small difficulty. The display, however, was well worthy of the inspection of the numerous company which it attracted, and though there was a slight falling off in some respects, this was amply compensated for in others, and as a whole it may be pronounced quite qual to its predecessors.

Stove and Greenhouse plants, as in former years, constituted the most important feature, and the collections shewn were numerous, and several of them of great excellence. Mr. T. Baines, gardener to H. Micholls, Esq., Summerfield, Bowden, Manchester, took the lead in the class for sixteen with an admirable collection, in which there were Ixora aurantiaca and coccinea, the latter with some remarkably fine heads of bloom; one of the finest specimens of Acrophyllum venosum ever seen, a very large and finely-bloomed plant of Genetyllis tulipifera, the showy crimsen and white Clerodendron Thomsonæ, Dipladenia crassinoda, Boronia serrulata, Eriostemon densiflorum, Franciscea confertiflora, Aphelexis, Azaleas, Heaths, and a fine plant of Epaeris Eclipse. Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood, came second with, among others, a fine specimen of Erica Cavendishii, E. ventricosa magnifica, Erioste mons, Pimelea decussata, Genetyllis fuchsioides, Dracophyllum gracile, a fine specimen of Tetratheca ericæfolia, and Allamandas, the last quite equal to any exhibited, but far from so fine as in former years. Mr. D. Donald, gardener to J. G. Barclay, Esq., Leyton, who was third, had a very good Stephanotis floribunda, the blue-flowered Sollya linearis, a fine Clerodendron Thomsonæ, Rhynchospermum jasminoides, and the deep yellow-flowered Cassia corymbosa. Other collections in the same class were furnished by Mr. Kemp, gardener to Earl Percy, Albury Park; Mr. Wheeler, gardener to J. Philpott, Esq., Stamford Hill; and Mr. Coles, gardener to R. H. Page Henderson, Esq., Beckenham, and comprised besides plants already named, examples of Hoya Paxtoni, Posoqueria longiflora, with long-tubed white flowers, Coleonema rubra, Polygalas, Chorozemas, Plerema elegans, the blue-flowered Leschenaultia biloba major, and Statice profusa.

In the class for ten, Mr. Peed was first, and Mr. Wilkie, Oak Lodge, Kensington, second; the latter having a fine specimen of Medinilla magnifica, and Clerodendron Balfourii, which, however, as shown was not more effective than the species Thomsonæ, of which it is a variety. The third prize went to Mr. Kemp, who had a large specimen of Coleonema rubra, and Erica Westphalingia in fine bloom. From Mr. Wheeler, gardener to Sir F Goldsmid, Bart., M.P., came the small yellow-flowered Dillwynia floribunda, a very old plant but not often exhibited, though useful in a New Holland-house.

In the corresponding class for Nurserymen, Messrs. Lee, of Hammersmith, took the first prize with a very fine specimen of Genetyllis tulipifera and Ixora coccinea, Aphelexis macrantha purpurea splendid in colour, and an excellent specimen as well, Stephanotis floribunda, Franciscea confertiflora, Azaleas in fine bloom, and Heaths. Mr. Rhodes was second with specimens of Heaths, Aphelexis, and Genetyllis tulipifera and fuchsioides, the latter very bright in colour. In the collection of Mrs. Glendinning & Sons, which was third, was Stephanotis floribunda in fine bloom; and in that of Mr. Williams, which took the next place, Bougainvillæa glabra.

For six plants, Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, was first; Mr. C. Smith, gardener to A. Anderson, Esq., Norwood, second; and Mr. Wheeler, Stamford Hill, third. The first two had good examples of Dracophyllum gracile; and Mr. Ward had also Phœnocoma prolifera Barnesii, a good specimen, but not sufficiently advanced in bloom to prove effective.

Mixed collections of fine-foliaged and flowering plants were on the whole excellent, especially those from Messrs. Lee, Williams, and Baines, who took the three principal prizes. The fine-foliaged plants consisted of fine specimens of Theophrasta imperialis, Rhopalas, Cordyline in divisa, Alocasia metallica, Sphærogyne latifolia, Pandanuses, tree Ferns, Palms, Crotons, variegated Aloe-leaved Yucca, and Marantas. Mr. Baines had a noble specimen of Dicksonia antarctica, with a thick trunk, Gleichenia speluncæ and flabellata, large and in beautiful condition, and Sarracenia purpurea with its green and purple-veined pitchers, remarkably fine. Among the flowering plants were Ixoras, Clerodendron fallax, Aphelexids, Genetyllis tulipifera, Stephanotis floribunda, Medinilla magnifica, Rhyncospermum jasminoides, Azaleas, Heaths, Eriostemons, and the white-bracted Mussænda frondosa, &c.

Of Heaths there was a good display of well-grown plants in good bloom, but not essentially differing from exhibitions of previous years. The principal prizes were taken by Messrs. Rhodes, Baxendine, Peed, J. Wheeler, Wilkie, Ward, and J. & C. Lee.

Azaleas were not equal to those exhibited earlier in the season, and many of them were past their best. There were, however, well-bloomed specimens of Extrani, Coronata, Holfordi, Perryana, Iveryana, Chelsoni, Optima, Trotteriana, Criterion, Triumphans, Gledstanesi formosa, Barclayana, and the effective yellow-flowered Sinensis. The awards were:—For eight (Nurserymen): first, Mrs. Glendinning & Sons; second, Mr. C. Turner. (Amateurs): first, Mr. Penny; second, Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., M.P.; third, Mr. W. Gell, gardener to Mrs. Beaufoy, South Lambeth. For six (Nurserymen): prize, Messrs. J. & C. Lee. (Amateurs): first, Mr. S. M. Carson, gardener to W. R. G. Farmer, Esq., Cheam; second, Mr. Wilkie; third, Mr. C. Smith, Norwood.

Orchids, most probably owing to the coldnesa of the weather, were not shown so numerously as usual. The best collection of twenty came from Mr. Penny, gardener to H. Gibbs, Esq., Regent's Park, and contained Odontoglossum Phalænopsis with five beautiful blooms, Phalænopsis grandiflora with three good spikes, a good Cattleya Skinneri, Dendrobium nobile, the yellow and brown Oncidium sarcodes, Saccolabium carvifolium, Aërides, Lælia purpurata in fine bloom, L. cinnabarina, Vanda suavis, Cypripedium lævigatum with four blooms, and a fine specimen of C. barbatum superbum. Mr. Gedney, gardener to the Rev. W. Ellis, Hoddesdon, was second with Cattleya citrina having six fine blooms, Lælia cinnabarina, with four spikes of bright orange flowers, Oncidium ampliatum majus, Dendrobium tortile, Vanda cristata, Epipbora pubescens, with yellow and brown flowers, a South African species which has been known for thirty years, but is seldom exhibited; Chysis Limminghi, Oncidiums, Cattleya Mossiæ, Aërides, and Saccolabiums. In the class for ten, Mr. Williams, of Holloway, was first with Cypripedium Stonei with remarkably fine flowers unusually delicate in colour, Anguloa Clowesii, Cattleya Skinneri, Lælia elegans, Dendrobium nobile Wallichianum, &c. Messrs. Lee, who were second, had among others Dendrobium densiflorum and nobile, Odontoglossum citrosmum, with more colour than usual, and the yellow and brown Oncidium altissimum. In the collection of Mr. Young, gardener to W. H. Stone, Esq., Leigh Park, Havant, who was first for twelve, we noticed a fine spike of Phalænopsis Schilleriana, Cypripedium hirsutissimum, and Odontoglossum citrosmum.

New and rare plants (with the exception of florists' flowers, which are noticed in a separate report), were shown in considerable numbers by Messrs. Veitch and Mr. Bull, and less numerously by other exhibitors. Nearly all of them, however, have been noticed in recent reports. First-class certificates were awarded to Messrs. Veitch for the yellow-veined Sanchezia nobilis variegata, Dichorisanda mosaica, Maranta Veitchii, Dracæna regina, with creamy yellow variegation, and Areca crinita, a graceful Palm; second-class certificates for Lomaria ciliata, from New Caledonia, Retinospora plumosa, and Bignonia ornata. Mr. Bull had first-class certificates for Sanchezia nobilis variegata, Dichorisandra mosaica, Anæctochilus petola marmorea, Tillandsia argentea, and Zamia villosa; and certificates of the second class for Asplenium myriophyllum, Agave macracantha, Athyrium Goringianum pictum, and Maranta roseo-picta. The last two being likewise shown by Mr. Williams, a similar award was made to him for these, as also first-class certificates for Sanchezia nobilis variegata, and the golden-variegated New Zealand Flax. Mr. Carr, gardener to P L. Hinds, Esq., Byfleet, had a first-class certificate for a beautiful specimen of Adiantum Farleyense, a distinct and bold-looking Fern of recent introduction. A similar award was made to Messrs. Lee, who, as well as Messrs. Veitch, exhibited Areca crinita.

Among miscellaneous subjects, Mr. Baines had some remarkably fine Ferns, including Davallia bullata, of a beautiful glossy green, D. tenuifolia, Pteris cretica albo-lineata, P. scaberula, and a very large-trunked Dicksonia antarctica, with a pendulous head. The same exhibitor likewise contributed fine Sarracenias, and Mr. Gedney Nepenthes Rafflesiana. From Mrs. Glendinning & Sons came some pretty Anæctochils, and from Mr. Drewett, gardener to H. Turnbull, Esq., Rookery Down, some beautiful wreaths of Bougainvillæa spectabilis.

Nothing could, I think, display more strikingly the wonderful skill and successful culture of English horticulturists than the marvellous display at the Crystal Palace on Saturday, after a winter unexampled of late years for the duration of its severity, and a spring which almost seemed to be a renewal of winter, with changes of temperature during the present month which were enough to baffle all precautions. Yet never have I seen, and rarely has any one else seen, such a display at the Crystal Palace May Show. Orchids were weak; but the wonder was, not that they were so few, but that there were any, considering the danger of having them frosted, a calamity which befell a vanload of Azaleas only the other day on their way to a show. Azaleas were not quite so good as I have seen them, but the stove and greenhouse plants were magnificent; and the Pelargoniums and Roses everything that could be wished. It is of these that I wish to give a few notes: and first as to the queen of flowers. The two collections of ten exhibited by Mr. W. Paul and Mr. Charles Turner were truly magnificent, the fault of the latter being that they wanted a few more days, as many of the plants were not sufficiently in bloom. The first prize was taken by Mr. W. Paul with Juno, a magnificent plant; Charles Lawson, as it always is, very beautiful; Général Jacqueminot; Madame de St. Joseph (Tea); Souvenir d'un Ami (Tea), a beautiful plant; Madame Villermoz (Tea), very good; Senateur Vaisse; Lælia, or Louise Peyronny, a beautiful plant; President, and Paul Ricant. Mr. Turner's consisted of Anna Alexieff, Victor Verdier, fine; Souvenir d'un

Ami, Charles Lawson, Général Jacqueminot, a fine plant; Souvenir de la Malmaison, Maréchal Vaillant, lovely; Paul Perras, Madame Damaizin, and President. Messrs. Paul & Son were third; this collection contained a lovely plant of Maréchal Niel. In the class for twelve Roses in eight-inch pots Messrs. Paul & Son were first with nice young specimens of Princess Mary of Cambridge, Maurice Bernardin, Souvenir d'un Ami, &c. Mr. Charles Turner was second, and Mr. W. Paul third. Messrs. Paul & Son also exhibited some boxes of beautiful cut blooms, to which an extra prize was awarded; and around these as usual was gathered a regular bevy of delighted visitors, who conned with more acumen than they did most things the very beautiful blooms exhibited.

For the last two years Mr. Turner has not been quite up to the mark with Show Pelargoniums. He tried some experiments, I believe, and they certainly had not been very successful. He has now quite recovered his ground, and I have never seen more magnificent plants than those he exhibited on Saturday, and with which he easily gained the first prize. They were Desdemona, Rose Celestial, a plant which was perfection itself; Lilacinum, Royal Albert, a fine flower and very effective; Spotted Gem, very pretty; Mdlle. Patti, a lovely flower with a clear white throat; Pericles, Belle of the Ball, Fair Rosamond, Exhibitor, and Fairest of the Fair. Mr. Fraser was a good second with Celeste, a rich warm rose, a little crumpled in the petal; Sanspariel, Desdemona, Candidate, Empress Eugénie, Beacon, Regina Formosa, Pericles, Roseum, a beautifully bright flower, and James Lodge. Amongst Amateurs Mr. Nye, gardener to E. Foster, Esq., Clewer Manor, was first with Favourite, Mdlle. Patti, Royalty, Sir C. Campbell, Belle of the Ball, Rose Celestial, Patroness, Fair Rosamond, and Garibaldi. Fancy Pelargoniums were also very beautiful; more difficult to show well than the show varieties, their successful culture displays greater skill, and the plants exhibited really seemed the very acme of perfection. Mr. Turner was again first with Lady Craven, Ellen Beck, very pretty; Lucy, Delicatum, very fine; Roi des Fantaisies, and Undine, very fine. Mr. Fraser, who was second, had Clara Novelle, Undine, Delicatum, Ellen Beck, and Marionette. Amongst Amateurs Mr. Donald was first, and Mr. Weir, gardener to Mrs. Hodgson, second.

I can well understand the perplexity into which the Judges must have been cast at the Tricolor Pelargonium Exhibition on the 21st, by the sample from only three exhibitors on Saturday; but some limit must be made, and especially now, as so much is said and thought about them. The three exhibitors were Messrs. F. & A. Smith, of Dulwich, who had a large collection; Mr. Watson, of St. Albans; and Messrs. Carter, who had some boxes of three varieties and a plant of a new seedling, which, if it retain its character when propagated, will be, indeed, a gem—Prince of Wales. It is very large, and a noble-looking plant. Messrs. Smith obtained first-class certificates for Exquisite, Mr. Grieve, Resplendent, deep yellow edge, broad zone, carmine red with black, very fine; Jetty Lacy, really magnificent, bright golden yellow, chestnut red and black zone; Louise Smith, yellow margin, zone of red and black. Mr. Watson, of St. Albans, had first-class certificates for his two fine plants—Mrs. Dix and Miss Watson, and Messrs. Carter had one for Titania.

Among the Show Pelargoniums Mr. Wiggins obtained a first-class certificate for Hermit, a fine, large white flower, with deeply-marked upper petals, and L'Empereur, a fine warm rosy crimson flower, and a second-class certificate for Queen of Roses, beautiful in colour, though somewhat rough. Mr. Bull obtained a first-class certificate for Lobelia Rosy Gem, a very curious and distinct colour; Mr. Cunningham a first-class for L'Elegante, silver-edged Ivy leaf; and Mr. Bull had Silver Gem, in the same style, but better. Messrs. Downie and Co. received a first-class certificate for Emmeline, a rosy pink Nosegay.—D., *Deal.*

ROYAL BOTANIC SOCIETY'S SHOW.

The first of the great summer Shows of this Society was held yesterday, and was in every respect a charming display, for although many of the subjects had appeared at the Crystal Palace on the previous Saturday, the fresh green turf banks employed at the Regent's Park instead of stages, made the plants look fresher and more beautiful than ever. Stove and greenhouse plants were as usual numerously shown, and in excellent condition, and of Ferns and fine-foliaged plants Mr. Williams had very fine collections. Heaths, too, were well represented; and Pelargoniums, both Show and Fancy varieties, as exhibited by Messrs. Turner, Fraser, Nye, and Ward, were not only large but in profuse bloom. Roses from Messrs. W. Paul, Turner, Paul and Son, and others, were admirable, and contributed largely to the effect of the Exhibition. Among Orchids Cypripedium candatum, in a fine collection from Mr. Wilson, gardener to W. Marshall, Esq., Enfield, was the finest specimen of that singular and highly ornamental species which we remember having seen. Odontoglossum Bluntii had no less than eleven of its beautiful blossoms, the largest number with which it has as yet been shown, except by Mr. Anderson, of Meadow Bank, who exhibited it with twelve. Of new plants, Messrs. Veitch and Bull had each interesting collections. Fruit was not invited at this Show, but Mr. Turner, of Slough, had some fine Muscat and Black Hamburgh Grapes, Grosse Mignonne Peaches, and Nectarines. Mr. John Waterer's American plants, though not yet at perfection, were still sufficiently advanced to add materially to the attractions of the Show. We shall give a full report next week.

THE APPROACHING MANCHESTER HORTICULTURAL EXHIBITION.

One evening last week I took one of my occasional walks through the Manchester Botanic Gardens, and was particularly impressed with the extensive preparations which are being made for holding the great National Horticultural Show in June next. It occurred to me that a brief account of the arrangements for the occasion would be interesting to your numerous readers.

It is, I suppose, generally known that there is in the garden a large glass building, called the Exhibition-house. This structure is 200 feet in length, and 60 feet in width, and in it all the ordinary flower shows are held. Along one side of this structure, and connected with it, there will be erected a tent of the same dimensions, and the large sliding doors in the side of the building will be drawn back, so that persons may easily pass from it to the tent, or the contrary, thus making the two structures for all practical purposes the same as one. By this means the amount of space available for exhibition purposes will be doubled. There will be a broad walk down the middle of the tent, and a stage on each side for the various collections which it will contain.

In addition to the Exhibition-house and tent, another structure is now being erected at right angles to these, extending along and beyond one of their ends. This consists of a wooden framework, covered with canvas, and is 60 feet wide and 300 feet in length. The internal arrangements of this wing are somewhat similar in style to those adopted at the great International Show of last year, consisting of a series of grass banks and gravel walks. The space of 300 feet is divided into six equal portions, and in the centre of each is thrown up a circular mound, 6 or 7 feet high, and having three tiers or stages all covered with green turf. These are surrounded by a gravel walk 12 feet in width, and on the other side of this walk there are more grass banks of two stages, extending the whole length of the building.

It will be understood from the above description that the general form of the Show will be something like the letter **L**; and it will be evident to the reader, that a person standing in the angle thus formed would be able to see the whole length of both wings without changing his position. This circumstance has been taken advantage of by forming an artificial mound, about 12 feet high, over the top of which the broad walk that runs through the tent first described is made to wind, in its way to the grass banks in the other wing. From the top of the mound the whole of the exhibition will be seen at a glance and will no doubt present a very imposing appearance.

Orchids and the more tender stove plants will be placed in the Exhibition-house; fruit, vegetables, and cut flowers will be arranged in the tent at the side of the building; and the larger specimens of flowering plants, Ferns, and ornamental-foliaged plants will be staged on the grassy shelves which surround the mounds in the long wing. The exit from the Exhibition is so placed that the visitors, on emerging from the building, will find themselves on a broad gravel walk which surrounds the flower garden, situated on their left hand, and a lake of water, with its islands and ornamental bridges, on the right. The various ranges of hothouses, greenhouses, &c., together with the lodges and entrance-gates, are all being repainted for the Show, which, so far as I could learn, is likely to prove a great success. —Thos. Jones, *Gardener, Rusholme.*

CULTURE OF CUCUMBERS IN POTS.

Permit me to add my small stock of experience of the pot-culture of Cucumbers, having formed the opinion, before I saw it advanced in the Journal, that the system was good.

I have grown good crops of fruit on plants placed at the bottom of 11-inch pots, set on an inside Vine border, the plants being surrounded with loam as they increased in height, until it was heaped up above the rim of the pot. I think I may say they were good crops, as the fruit averaged 18 inches long, with a circumference of 7 inches, some being as large as 22 inches by 8¼ inches, and 3½ lbs. in weight.

One of your correspondents mentioned 16 and 18-inch pots in a way which led me to suppose my pots had been unusually small, while another referred to the large size of the leaves of his plants. I have never permitted this luxuriant foliage, for my practice has been to syringe freely, shut up early, and prune severely.—Amateur.

[We have grown Cucumbers and Melons in smaller pots

than the 11-inch ones you use with such success, but we prefer 16 or 18-inch pots as involving less trouble; and our practice has been to place the pretty-well-established Cucumber plant, say from a 5-inch pot into one of 16 inches in diameter, so as to leave a fourth of the pot unfilled, and then earth up by degrees, using turf and zinc rings above the surface of the pots. So far as we recollect we never had a case of Cucumber disease when the plants were so cultivated. You have done so well that we do not advise you to alter your mode.]

BLUE BEDDING PLANTS.

A CORRESPONDENT in the Journal of May 9th, signing himself an "AYRSHIRE GARDENER," regrets the absence of blue bedding-plants. He makes no reference to the lovely little blue Anagallis Monelli, or Italian Pimpernel, I believe. It appears to me as lovely as the Lobelia. I do not know the disadvantages of the Anagallis, unless it is that it requires a very hot sun to make it open. I do not have it here. My former garden was a very sunny one, generally much burnt up. Possibly the Anagallis might not do well in Ayrshire.—A SUBSCRIBER.

STOCKS FOR TEA-SCENTED AND NOISETTE ROSES.

I SHALL be much obliged for some information as to the best stock for working Tea-scented and Noisette Roses upon. I like the Manetti stock for Hybrid Perpetuals, and shall be glad to know if it is equally good for other kinds of Roses. In this wet and stormy part of the country I find that the kinds which are not very double succeed best, as the flowers open more freely than such Roses as Duc de Rohan and Comtesse C. de Chabrillant.

The two sorts that are my mainstay here are Gloire de Dijon and Général Jacqueminot, as they afford abundance of bloom for gathering from the end of May till Christmas, and are both good of their kind, though very old-fashioned in these days.—B., *Dolgelly, North Wales.*

[Excepting Cloth of Gold and Isabella Gray, neither of which is suitable to your wet, cold, and windy part of the country, I have always found the common Noisettes (I keep none of them now), and Tea-scented Noisettes do well on their own roots, on the Briar, and on Manetti. I specially recommend to you Triomphe de Rennes, Solfaterre (south wall), Celine Forestier, Gloire de Dijon, and Maréchal Niel (south wall). The first, third, and fourth prefer a wall, but they will do perfectly well in the open ground on their own roots, on the Briar, or on the Manetti. I name a few easy and abundant and late bloomers suitable to the part of the country described. Some of them are old Roses, but they are still good and valuable. Those marked with an asterisk are extra fine. The colours may be found in Mr. W. Paul's catalogue.

Hybrid Perpetuals.—Anna Ylexieff, Auna de Diesbach, Baronne Prevost, Beauty of Waltham, *Charles Lefebvre, the finest of all Roses; Duc de Cazes, Duchesse de Medina Cœli, Duchess of Sutherland, Empéreur de Maroc, Eugène Appert, Géant des Batailles, Général Jacqueminot, Jean Goujon, *John Hopper, *Jules Margottin, Lion des Combats, Lord Raglan, Madame Alfred de Rougemont, Madame Boutin, Madame Hector Jacquin, not a late bloomer; *Madame Victor Verdier, Maréchal Vaillant, Mrs. W. Paul, Paul de la Meilleray, *Prince Camille de Rohan, *Senateur Vaisse, *Souvenir de Comte Cavour, *Triomphe de Paris, Triomphe des Beaux Arts, not full; Vicomte Vigier, Princesse Mathilde, not full; *W. Griffith, Cardinal Patrizzi, Madame Louise Carique, Mrs. Elliot, Pius IX., Reynolds Hole, and Pauline Lansezeur.

Bourbons.—Louise Odier, Michel Bonnet, very pretty; Bouquet de Flore, Queen, and Sir J. Paxton.

Tea Roses.—*Devoniensis (wall), Sombreuil, extra hardy and fine.

Autumnal Moss.—Salet; Madame E. Ory is the best, but it might not open in a cold climate.

"B." would find the following summer Roses great acquisitions with duplicates and cutting back by instalments, or by the spring removal of one each of the duplicates, their season of blooming may be greatly prolonged. They do well on all stocks:—

Damask.—La Ville de Bruxelles, Madame Soëtmans, or Zoutman. *Gallica.*—Boula de Nanteuil, La Volupté, Kean, Schismaker, pure slate, and Tricolor de Flandres. *Hybrid China.*—Général Jacqueminot, the best; Madeleine. *Hybrid Bourbon.*—Charles Lawson, Coupe d'Hébé, Paul Ricaut.

When I left Rushton I gave my stock of noble summer Roses to Mr. and Mrs. Farquharson. They never had such a Rose season before! I bought the plants of Mr. Cranston ten years ago, and nobly did they bloom and withstand all the shocks of time. I brought here only Schismaker, a most curious Rose, and Madame Zoutman, the finest of all white Roses.—W. F. RADCLYFFE, *Okeford Fitzpaine.*]

FRUIT PROSPECTS AT HADDINGTON, N.B.

IN a note which I sent you in February last, with some remarks on the effects of the intense cold of the 1st of January, which had then become apparent, I stated that some Pear trees in my garden had suffered much, the buds having been apparently deprived of all vitality. As the season advanced this became quite visible, and while the blossoms on the uninjured trees expanded, the embryo buds of the former withered and became like dust. However, we had some fine warm days in April, which brought out the blossoms of all kinds of fruit, and the Pear trees in this district were loaded with flowers. With the exception of those of which the buds had been killed, appearances were so favourable, that I began to think that I should be obliged to resort to the thinning process. However, on the 13th of this month we were visited by a severe frost, the thermometer falling to 25° during the night, and in the morning all Potatoes and plants of equal tenderness, except where under the shelter of a wall with a south aspect, were cut to the ground. Since then we have had a succession of very cold north-east winds, and occasionally some heavy showers of hail, and this has materially altered the complexion of gardens here, which were previously exhibiting a rich and healthy appearance. Many of the embryo Pears which were setting in clusters, are now turning yellow, and dropping off, and although we may still have a partial crop, yet in the cases of the Duchesse d'Angoulême, Gansel's Bergamot, and other tender kinds that require a high temperature while setting, the trees are already almost bare of everything but leaves.

The frost of the 13th browned the tops of the Apple blossoms, and, no doubt, has killed many of the germs, but there is a rich display of flowers, and, perhaps, as many will set as will be sufficient for a crop. Plums blossomed abundantly, but the result in such weather is doubtful. Cherries seem setting badly, and look a scanty crop. The early blossoms of Strawberries are black in the heart, and a certain per-centage of the crop is destroyed, but with good weather soon we may still have a fair crop. The plants look strong and healthy, and bear plenty of flower-trusses. Gooseberries and Currants show well, but I hear complaints of the fruit of the former dropping off in some gardens.

As I write the cold still continues. The thermometer has never to-day (May 22nd) risen higher than 47°. We have seldom seen such unfavourable weather for bedding-out plants. They must either be planted out with the risk of perishing, or kept under cover to be drawn up.—JOHN FERME.

THE FROSTS OF MAY.

SHANBALLY, IRELAND.—We have not escaped without some loss from the effects of the frost during the past winter; yet when I looked this morning (May 23rd), and found the thermometer (Negretti and Zambra's, 3 feet from the ground), at 20°, and everything covered with hoar frost, ice in the gutter of the greenhouse five-sixteenths of an inch in thickness, I began to reflect whether we were past the worst even then. As soon as the sun shone out, with a piercing easterly wind, I found Potatoes, Kidney Beans, young Cauliflower plants, and, I fear, Beet just up, all turned black; Strawberries in bloom, Roses, Peas, and strong Cauliflower plants, hanging their heads as if dying. Even the young shoots of Plum, Pear, and Apple trees, and of Beech hedges are scorched. I hope that others have escaped better, or I do not know what will become of us soon, for, however hard it is to replace Roses and Conifers, I find it far more difficult to satisfy the cook when Cauliflowers and good Potatoes are not to be found.—GEORGE BECKETT, *Shanbally, Clogheen, Ireland.*

NASEBY WOOLEY.—Last Wednesday and Thursday nights (May 22nd and 23rd), occurred the sharpest frost that has been known here for some time so late in this month. At 12 o'clock at night the thermometer in a cool greenhouse stood at 29°,

and one out of doors at 22°. Even on the top of the Melon lights there was ice as thick as a twopenny-piece. The frost has quite killed Kidney Beans and Dahlias, blackened Potato tops, Ivy, Laurel, and the young growth of shrubs and trees. It has done much damage to bedding plants in several places round here. It was so severe as even to catch Pelargoniums covered with mats. I had two beds of Calceolarias out, and it has turned some of the leaves quite black.

Norwich.—A thermometer placed 3½ feet from the ground, facing west, registered

On May 22nd,	8 P.M.	32°,	lowest point	28°
,, 23rd	,,	33°	,,	26°
,, 24th,	10 P.M.	28°	,,	23°
,, 25th			,,	40°
,, 26th			,,	45°

Showing 17° difference between Friday and Saturday nights. Bedding plants are much injured, and in some instances killed, so are Kidney Beans, Potatoes, and Strawberries, the bloom of the latter being black inside. Wind N. to N.E.—F. A. S.

[We have similar reports from many other localities; but the untoward severity is not confined to Europe. In North America it has been so general and persevering, as to rouse even the rustic poets, and this is an extract from one of their outpourings:—

"Well, Spring, youv cum at last, hev you?
The poit sez youv bin a sittin in Old Winter's
Lap—now, aint you ashamed of yourself?
I spose the old feller's bin a bussin you;
I should think he had from your breth
A bein so cold—but that's the way them
Old fellers hev a doin.

"But now youv eum!
We feel your cheering presenz wen we
Git round onto the south side ov the barn!
We hear the hens a kaklin when they've
Laid a eg! We see the Horseradish
A starting up along side the garding
Fens! The wommin is a lukin into
The old tepot after garden seedes!
And all these things make me think youv cum!

"Ef so be I've riled
Ye, Spring, a showing up of yer short cummins,
Jes set it down to havin a poits liseus,
(Tho I haint taken wun out yet, I'low to)."

—Eds.]

WHAT IS MEANT?

A paragraph is worded thus in a prize schedule—"For the best 12 specimen plants of any kind in 12 varieties." Would the Show and Spotted Pelargoniums be admissible as two varieties, the silver and golden-edged Zonal Pelargoniums as two varieties, and the Nosegay and Zonal green-leaved as two varieties?—An Amateur.

[Interpreting the clause strictly, twelve Pelargoniums if all of different varieties would comply with the wording; but we think that the Committee of the Society could not have so intended. They probably meant twelve different species. Why not ask the Committee for an explanation?]

POOLEY'S GROUND TOBACCO.

Now that the Board of Customs has remitted the duty on ground tobacco, mixed in bond with other ingredients to prevent its being smoked or snuffed by human beings, we shall no longer be at the mercy of clouds of insects, so destructive to vegetation at this season.

About ten days since I selected for the application of the above powder a Mirabelle Plum, which had not borne a crop for many years, the leaves having always been destroyed by aphides early in the season. The powder ought to have been applied before the dew was on the leaves and insects, and, if possible, when the air was still. I waited for neither, as I was afraid another day would put an end to all hopes of a crop. However, the tree is now healthy, and the fruit as numerous as well can be. I applied the tobacco dust by placing it in an old worsted stocking, tied to the end of a pole. This dusted every leaf, at the expense of a halfpennyworth of tobacco powder. The same effect was produced on a dozen Rose trees. The powder, unlike others that have been brought out, can be either washed perfectly clean off the leaves or left on, as it is quite harmless. It is applied to the Hop plant when the dew is on at the rate of ten acres a-day, with the apparatus which is used for sulphuring Hops; 1 cwt. per acre being sufficient, at a cost of £2 2s.—Observer.

NOTES AND GLEANINGS.

We are glad to observe that the Royal Horticultural Society, following the example set by the International Horticultural Exhibition of last year, announce that their Great Fête, commencing June 4th, will remain open for five days, and we understand it is intended to admit the public on the Thursday and Friday for 1s. The policy of giving the million a chance of seeing such a grand Exhibition will, doubtless, prove successful.

—— We hope that there will be a very good attendance at the anniversary dinner of the Gardeners' Royal Benevolent Institution on the 27th of June. Sir Robert Peel will preside, and there is a goodly array of Stewards.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Attend to hoeing and otherwise stirring the ground. Weed and thin crops. *Cauliflowers*, *Celery*, and *Lettuces*, plant out; also *Capsicums*, in a warm situation. *Endive*, let a sowing be made directly. Throw in a sprinkling of Early Dutch *Turnip* on a cool border, neither digging nor using manure. It is a mistaken notion to persist in digging ground for Turnips in kitchen gardens, so full of old manures, the Turnip being naturally too gross there, under any circumstances. We always choose the poorest and hardest ground we can find, and merely hoe the seed in, by these means we have always procured good Turnips. Nothing is better than well-burnt ashes of any vegetable refuse for the Turnip. *Kidney Beans*, let full crops be planted forthwith, and a row of Knight's Marrow *Peas*, or the British Queen. The row should be prepared after the manner of a Celery-drill, and the manure completely saturated with moisture. *Potatoes*, earth-up. *Onions*, sow a few for drawing young.

FRUIT GARDEN.

The leading shoots of Peach, Nectarine, and Apricot trees will require to be tacked-in, taking care to allow plenty of room in the shreds. In thinning-out superfluous shoots, it is necessary to foresee what portions of wood will require to be removed at the ensuing winter pruning, and the most appropriate shoots must be accordingly reserved for succession and encouraged throughout the summer. If any shoots laid-in for bearing have failed to produce, they may be gradually removed, in order to afford more space for successional young shoots. In regulating the vegetation of these trees, commence at the base and proceed successively along each branch, but do not dress the lower part of the tree and leave the upper untouched even till next day. Whilst the trees are being gone over insects must not be overlooked. The aphis seems to delight in healthy foliage, but the red spider prefers that which is less thriving, particularly from dryness at the root. It has been stated of this pest, that water is its certain destruction, the water, however, requires to be applied at the roots as well as the tops. Examine grafts and re-clay if necessary. Strawberries in blossom must be well watered. Remove some of the watery shoots from the Currant bushes, and thin the Raspberry suckers.

FLOWER GARDEN.

The different kinds of climbing Roses must be carefully tied or nailed to prevent their being injured by wind. Plant out Dahlias, Salvias, Ten-week Stocks, Asters, Convolvuluses, Nolanas, Campanulas, Kaulfussias, Nemophilas, Indian Pinks, &c., in borders or flower-beds, likewise a few on rockwork. Pot a portion for planting out into beds later in the season, to replace such as have gone out of bloom. Hoe and rake borders, and cut off dead flowers as they appear. Divide Campanula carpatica, and plant it for edgings or in borders of herbaceous plants. Remove any shading from plants recently planted out, and if the weather again set in hot, shade for a few days. Tulip roots should be taken out of the ground when the foliage assumes a yellow, withered appearance. In the present season in particular, from the damaged state of many collections, this should be carefully attended to. Should the bulbs be in a decaying state their exterior coverings or skins should be removed, which will bring many from a flowering state to mere offsets. The buds of Pinks may now be thinned out, and where intended for exhibition they should be reduced to two at most. The laterals may also be removed. Watering once a-week with liquid manure will now be requisite. Carnations and Picotees are, generally speaking, suffering this season, and, on the average, are not looking so well as usual. Attend to the cleanliness of the plants and keep down green fly, giving water and

attending to the general routine culture when required. Pansies should also be shaded from excessive sunlight. They have been severely attacked by the legions of slugs which have everywhere abounded this season. Hand-picking appears to be the only effectual remedy. Dahlias which are sufficiently forward should be staked.

GREENHOUSE AND CONSERVATORY.

Climbing or trained plants now require attention in regard to thinning, training, stopping, &c. If the sun shines very brightly a slight shading would be of benefit for a few hours on very hot days. The inmates of such structures, however, are sometimes very various in character and habit, and the foregoing advice would be more applicable, perhaps, to the various New Holland plants, Oranges, Camellias, &c. In all mild weather the fires in the greenhouse may be nearly or entirely dispensed with. If the weather is genial and accompanied with bright sunshine, heat sufficient for the night may be secured by shutting-up early, not, however, soon enough to scorch. A general rule can scarcely be laid down in such cases to guide the inexperienced. On sunny afternoons the air may be reduced one-half at three o'clock, and altogether shut off at four o'clock. Attend to the various points of cultivation as before recommended, remembering that now is the period for rapid growth. Camellias should be placed in a little warmth to make wood and set their flower-buds; be particular in never allowing them to suffer from want of water. Keep up a gentle moisture by occasional syringings. Azaleas as they go out of flower may also be similarly treated; indeed, all kinds of greenhouse plants are benefited by being kept rather close and warm when making their wood. Rhododendron arboreum and its varieties should be fully exposed to the sun under glass, if you wish to have perfect foliage and abundance of flower-buds. Partial shading to these is their ruin, both as regards their foliage and the forming of their flower-buds.

STOVE.

Thorough cleanliness, free ventilation, plenty of atmospheric moisture, and occasionally a slight shading in very bright sunshine are the prime requisites in this house. No means should be neglected to encourage a free growth at this period in the Orchidaceous tribes in order to have their pseudo-bulbs firm, well-fed, and well-ripened at an early period. As the weather still continues changeable, take especial care that the young shoots of all plants in this house shall not be checked or injured by cold draughts, or scorched by sudden outbursts of sun.

PITS AND FRAMES.

Shift and carefully attend to such plants as are intended to form specimens; sprinkle with water and shut up closely late in the afternoons of hot days. Put in cuttings of choice greenhouse and herbaceous plants, in order that they may be rooted before the pits are again wanted for cuttings to supply the flower garden next year.—W. Keane.

DOINGS OF THE LAST WEEK.

Many of us will remember the Derby day of 1867, for its hail and snow, and bitter north winds, and the keen frosts which occurred on the succeeding mornings of the week, cutting down to the ground all our Scarlet Runners, and Dwarf Kidney Beans not under protection, blackening our forward Potatoes, and causing the pods of forward Peas to look as if they had been scalded by a spattering of water close on the boiling point. Strawberry plants have, as yet, suffered less than we expected, though early on Thursday morning the leaves were like boards, and the bloom encased in sheets of ice; but fortunately for us on that morning, which was the coldest, the sun did not appear until late, and not much then, and the thawing process was effected very gradually. If we had many such seasons, it would be well to revert to the old-fashioned style of flower gardening—the mixture of shrubs, herbaceous plants, annuals, &c., filling up all vacancies with bedding plants, instead of making these the principal decorative objects. This we do know, that not a few, who were kindly but somewhat ostentatiously pitying us for being so far behindhand, are now wishing that they had turned out fewer of their tender plants. We should not like to venture for a fortnight, unless there were a great change, Heliotropes, Perillas, Amaranthus melancholicus, &c. Such plants when thoroughly chilled, seldom do much good afterwards. It is not desirable not to be able to finish combination-beds at once, but in such weather it is safest to do the work at different times, turning out the hardiest plants first, in their allotted places, and afterwards the more tender as the weather becomes more settled.

KITCHEN GARDEN.

One of the first matters attended to after the frost, was sowing Scarlet Runners, Dwarf Kidney Beans, &c., in boxes for future transplanting, placing them where they could be forwarded by heat; and then, as the weather was dry and parching, though cold, ran the Dutch hoe through all the borders and quarters where it could be worked. We likewise earthed-up Cabbages, Potatoes, and Cauliflowers, where possible. Our earliest Cabbages, that we had to forward in pots before transplanting, owing to the four-footed vermin having left a desert of our autumn-planted quarter, are hearting well, and became too thick before we could earth them up. The somewhat forcing treatment which they have received, first potting the little plants, putting them under glass, and then after planting giving them a dash of manure water, has rendered the stems too small in proportion to the heads; therefore, a little earthing-up would have been desirable.

We mention these Cabbages thus particularly for two purposes—first, that it may be clearly known that when all this trouble has to be taken, even such a common vegetable as a Cabbage cannot be obtained quite so soon, or at the same cost as respects labour, as when the plants can be put out at once and be secured from hares and rabbits. It would be sheer folly for a man to meet the competition of the market with Peas for the season, if, instead of casting his seed into the ground, he found he must either transplant his Peas when 3 or 4 inches high, or protect the seeds and the seedlings by wire netting. When people talk about a garden costing so little, it must be clearly understood that there must be none of this wasting, and, what is worse, harassing labour, of doing, having the work undone for you, and then the doing it again as best you can. Secondly, we would say, Let the importance of this doing and doing again in such circumstances never be forgotten by gardeners, as they may rest assured that employers will not forget to look for their favourite dishes at the usual times; though they will very likely forget all about disasters to crops, brought about less from any fault or carelessness of the gardener than their own regulations as to other matters, which will certainly consign a good portion of the garden produce to other quarters instead of lending attractions to a gentleman's table. We do not at present philosophise on the right or wrong in the matter; we merely wish to state the too general fact, that when produce is wanted the destruction from frosts and from the predations of two-footed and four-footed game are apt to be quite forgotten.

Slugs and Seeds.—From all quarters we hear of the numbers of slugs and snails this season. One of our best gardeners has informed us that he has had fifteen distinct varieties this season, and of every variety legions. After the severe frosts one would have thought they had had a nipping. One peculiarity in our own case is, that though we saw too well where they had been, we have been able to find but comparatively few on the surface of the ground, even in mild dewy mornings, when they are generally most abundant. It is just possible, too, that great as their depredations have been, they have been blamed more than they actually deserve. Our own opinion is, that seeds in general have not been quite up to the mark this season, whether owing to the dull wet autumn of last year, or other causes, we could not take upon ourselves to decide; but there can be no question, that in some cases where snails and slugs were blamed, they never had the chance of doing mischief, as the seed rotted in the ground, though receiving all proper treatment. We have received many complaints as respects even Peas, and though some sorts have come up as well as ever, others that were thin were found to have many seeds moulding and rotting that had never germinated, or had come weakly as old seeds will. For ourselves from close picking, the wet of last autumn and an invasion of rats, we did not have the chance of saving any seeds of Peas.

We have already alluded to the general hoeing of all ground where the Dutch hoe can go. Where neatness is an object, a hack draw with the hoe will leave all level and neat, but this is seldom necessary, and the sun and the breeze soon put the weeds out of sight.

The dreaded *Bindweed* has been cut twice already, and where plenty of time cannot be afforded to dig out its roots the Dutch hoe is the grand remedy, as, if the shoots are constantly cut by the time they grow 3 or 4 inches above the soil, the great milky-white roots will be forced to yield up their life in despair, though if left alone half an inch of these roots would ere long make the progress of a garden. Of all weeds this is

the worst, and in some places we are almost beaten by it every season, because it grows too fast and too strong before we can commence to combat it, and it is comparatively of little use to cut it after it has twisted round something to the height of 2 or 3 feet. By that time if you cut the top, the old root has received enough of strength to send out a lot more strong shoots. The most economical mode of extirpating it is not to trouble yourself greatly with the large white roots when digging, but to have a man on purpose, and tell him whatever else he does, a shoot of the Bindweed is never to be seen more than 3 inches in length. We have often resolved to do so, but then when the pinch of so much to do comes, the man cannot pay attention to this work in time, and in a few days if let alone the pretty white-flowered Bindweed that adds, along with the Clematis, such a wild loveliness to our hedge-rows, will cling to and suffocate in its embrace the very plants you would wish to be free from it.

What we can scarcely account for is, that after having been extirpated for years, it will come back again without any apparent cause. Some years ago we had two small pieces of ground, perhaps 24 feet square, quite overrun with it. One piece we kept hoeing, and gave it a kind of summer fallow, planting only some Lettuces, &c., but never allowing a shoot to grow above a few inches in length. On digging we could soon have taken out a barrowload of roots. The other piece was, if anything, worse, and the weed was allowed to have its way until it carpeted the ground with its twisted wreaths. It was then cut with an old scythe, and the crop burned, and a layer of short grass from the lawn a foot deep was placed on it, and allowed to be there until the autumn. In both of these pieces when dug up at the end of autumn, not a root was to be seen. The hoeing, and the cutting and grass-covering, had destroyed the fleshy roots, and for years not a shoot made its appearance, but this season in the latter piece, a few shoots have shown themselves, and we fear they must have found their way in small bits in the dressings applied. We only wish the great proportion of our readers may have no occasion to trouble themselves with such a pest, beautiful though it is; but if any should be so unfortunate, the Dutch hoe used quickly and repeatedly, is the best remedy. Hot short grass laid over the ground long enough will also destroy the roots. Some years ago a lady sent a very fine variety of this climber. The flowers are of the purest white, and very large, quite as large as those of the beautiful Ipomœa Learii, and though in placing it against a wall to show off its beauty, we took the precaution to put the roots in a large pot, and plunged it, these roots and shoots together found their way through and over the pot, and if let alone would soon cover the wall from end to end. We have often wished we had burned the roots instead of planting them in any way except in a woodland wild.

Mr. Keane, whose very timely and particular directions leave us more at liberty to indulge in general remarks, tells us in a recent Number to "manure and dig the ground as it becomes vacant, for the winter crops of Brussels Sprouts," &c. But what if you have no vacant ground? And what if you have no rotten or half-rotten manure? From a scarcity of tree leaves this season, we are short of manure. We expect we must get off the early Potato-beds, to place something beneath them for Celery; and as for crops of Cauliflower, as well as winter crops that will not go between Peas, we must depend chiefly for the help that can be obtained from short grass, and no bad help may thus be had, and with but little preparation. As the Broccoli is nearly cut, we wheel short grass on the piece from the lawn, tumbling it into a good-sized heap, where it heats strongly of itself, and then when shallow-trenched down in a rather thick layer, it yields no bad nourishment to all strong-growing crops. The only drawback to it is, that it requires to be spread and dug in before ladies are about in the garden. Even painters, who are used to disagreeable scents, were fairly overcome by the fumes from this short grass. When not so used, or forming a component part of hotbeds, linings, &c., it is too valuable to be lost, and if made a component of the rubbish-heap, and duly covered over, it will cause all to ferment, and not only communicate a richness to the whole, but, if the heat produced is strong, will help to kill all weeds and roots in the heap.

FRUIT DEPARTMENT.

The cold wet, which hung so long on Peach and Apricot trees unprotected, has much injured the shoots, killing some of the young wood outright. Had they been kept dry by even thin hexagon Nottingham netting, we have not a doubt but that they would have suffered little or nothing. This is one of the facts that will ever make unheated orchard-houses so valuable. The dryness and the stillness of the enclosed atmosphere are the great points of safety. These secured, success will much depend on retarding, by plenty of air, the time of blooming, giving plenty of air then, and only taking advantage of the confined heat from the sun after the fruit is set and swelling. We trust that Plums, Cherries, Pears, and Apples are sufficiently advanced not to suffer much from the frosty mornings. The Apple bloom, and we never saw the individual blooms larger and finer, had been mostly cast a few days before the 20th. A few Cherries are spotted; Gooseberries and Currants, which are very abundant, are sufficiently defended by the foliage to save them from danger. We think the Cherries were marked more by the hail than the frost.

Raspberries.—We have seldom had the canes injured by cold before this season, and we believe the injury was done by the severe frost after the new year. We were surprised that the canes did not break as usual. On examining these faulty canes there is hardly one of them which is not quite green, after moving the bark, and the cane seems sound enough to the core; but the buds along the cane, though looking as if nothing was the matter with them, when closely examined are found hard and dry, as if burnt right to the heart. We think it possible, that if the sap rises in such canes, fresh but latent buds may be thrown out. In such a case, if this took place, the sap would rise without the excitement of expanding buds. We can assign no reason why some canes have thus had their buds destroyed, and others have started and are showing fruit as usual.

Figs Out of Doors.—We have some on a west wall, from which, with but little attention, we have had good gatherings, and better since we left them not fixed so closely to the wall, and that mode of proceeding we learned from Mr. Tillyard, who had fine crops in-doors and out of doors at Bentley Priory. We used to put a few branches, &c., against these trees in winter; but in the press of other matters they were forgotten in the two severe frosts of last winter, and as we could scarcely have the cold more severe the trees were left to take their chance. We expected there would be little show this season, as every Fig that was left was frosted, and withered up and fell off; but what we did not expect to see was this—though the points of many shoots were killed by the frost, a plentiful supply of young Figs is coming from near the base of the shoots, and often all along them, and which would never have shown at all if a few small ones had been saved during the winter near the points of the shoots. As, except in a few extreme cases, the Fig tree never ripens more than one crop out of doors in our climate, we have always recommended the cutting away all fruit larger than a good-sized Marrowfat Pea that appeared on the shoots of the present year's growth in the autumn, as above that size they would almost certainly fall in winter. The above fact is corroborative of the propriety of that advice, and shows that when trees are wholly unprotected it may be carried quite as far in the removing of the summer-shown fruit. On these shoots, now bristling with young fruit, not one was to be seen in March, or even in the first part of April.

Strawberries.—As the houses become shady we have to resort to various schemes, which have already been adverted to, for keeping up a daily supply of fruit; and another reason is that in places where much artificial heat is used, Strawberry plants after the middle of May are very liable to attacks from red spider, and when ripening it does not do to use the syringe so freely as at other times. The frame and the pit, and sashes over borders, must therefore help us instead of shelves in houses.

Out of doors we never saw bloom more plentiful, or in such masses, and as already stated, except by retarding, we do not think the severe frosts have done much harm. The Dutch hoe has been driven through the spaces between the rows twice, to leave a loose surface, and to help to keep in the ground the moisture from the recent rains, and we would have used a sprinkling of soot and lime if we could, but the scuffling of the ground, which is rich enough, will do much to start and unsettle slugs and mice, the two greatest enemies which nets are powerless to keep away.

The keeping the fruit clean is the next consideration, and nothing is better than clean straw, where this can be had; but few places will be able to afford clean wheaten straw at the present prices. The next best material is litter from the stable-yard, well shaken, and packed in to the sides of the rows soon enough to be well washed by the rains; and the next best, if not the better of the two, is long grass before it begins to seed, and which is free from Daisies. This not only answers well

but in fine, dry weather, gives a sweet perfume of new-made hay to the garden. Short grass from the mowings of lawns, though often used, are about the worst, not only because in heavy rains the little bits of grass are driven into the Strawberries, and in close, damp weather, mouldiness of fruit ensues prematurely, but also because such short grass is almost sure to supply a dense crop of Daisies afterwards. Fresh tan is also excellent for the purpose, laid on thinly, and as soon as the fruit is set, as then all the acrid properties of the surface tan are washed away, and neither slugs nor worms like to come in contact with it. We have also tried boards, tiles, slates, &c., with advantage, though in very hot weather the latter are apt to scorch the fruit, and all such means are good for forming traps beneath them for slugs, &c. On the whole, when the flower-stalks are strong, instead of using tiles or boards, we would prefer the simple plan of putting in little sticks 2 or 3 feet apart at the sides of the row, and connecting them with a light string of small cord, which prevents the clusters of fruit falling on the ground. Among some of these modes we trust our humblest readers will find the means for keeping the delicious fruit from coming in contact with the earth. For want of such simple precautions we have seen fine fruit passed through several pails of water, and then dried on paper before being sent to table. In addition to these precautions were the berries for our own use, we would insist on the fruit being picked with footstalks to hold by, and sent to table in the basket in which they were gathered, or merely turned carefully into a suitable dish, without any attempt at dressing them into cones or other shapes, which can only be done by handling every fruit separately. Artistic appearance in all such cases is gained at the expense of true delicacy and refinement.

For ornamental department see previous weeks' notices.—R. F.

COVENT GARDEN MARKET.—May 29.

The weather of the past week has somewhat interfered with operations, but not to the extent of causing much difference in the quotations. There is an abundant supply, and vegetation has rapidly overcome the effects of the late frosts. Continental produce is of the usual character.

FRUIT.

	s.	d.		s.	d.
Apples ..... ½ sieve	3	0 to	4	0	
Apricots ..... doz	4	0	0	0	
Cherries ..... box	2	0	3	0	
Chestnuts ..... bush.	0	0	0	0	
Currants ..... ½ sieve	0	0	0	0	
Black ..... do.	0	0	0	0	
Figs ..... doz.	10	0	15	0	
Filberts ..... lb.	0	0	0	0	
Cobs ..... lb.	0	9	1	6	
Gooseberries .. quart	0	4	0	6	
Grapes, Hothouse .. lb.	5	0	10	0	
Lemons 100	5	0	10	0	
Melons ..... each	3	0 to	12	0	
Nectarines ..... doz.	15	0	24	0	
Oranges 100	5	0	10	0	
Peaches ..... doz.	21	0	42	0	
Pears (dessert) .. doz.	0	0	0	0	
kitchen ..... doz.	0	0	0	0	
Pine Apples ..... lb.	5	0	8	0	
Plums ..... ½ sieve	0	0	0	0	
Quinces ..... doz.	0	0	0	0	
Raspberries ..... lb.	0	0	0	0	
Strawberries ..... oz.	0	6	1	0	
Walnuts ..... bush.	10	0	20	0	

VEGETABLES.

	s.	d.		s.	d.
Artichokes ..... each	0	6 to	0	8	
Asparagus .... bundle	4	0	7	0	
Beans, Kidney, per 100	1	0	2	0	
Scarlet Runn. ½ sieve	0	0	0	0	
Beet, Red ..... doz.	2	0	3	0	
Broccoli ..... bundle	2	0	3	0	
Brns. Sprouts ½ sieve	0	0	0	0	
Cabbage ..... doz.	1	0	1	6	
Capsicums 100	0	0	0	0	
Carrots ..... bunch	0	6	0	8	
Cauliflower ..... doz.	6	0	12	0	
Celery ..... bundle	1	0	2	0	
Cucumbers ..... each	0	6	1	4	
pickling .... doz.	0	0	0	0	
Endive ..... doz.	2	0	0	0	
Fennel ..... bunch	0	3	0	0	
Garlic ..... lb.	0	8	1	0	
Herbs ..... bunch	0	3	0	0	
Horseradish .. bundle	2	6	4	0	
Leeks ..... bunch	0	3 to	0	4	
Lettuce .... per score	1	0	2	0	
Mushrooms .... pottle	1	6	2	0	
Mustd. & Cress, punnet	0	2	0	0	
Onions .... per bushel	4	0	5	0	
Parsley ..... per sieve	3	0	4	0	
Parsnips ..... doz.	0	9	1	0	
Peas ..... per quart	2	0	4	6	
Potatoes ..... bushel	4	0	6	0	
Kidney ..... do.	5	0	6	0	
Radishes doz. bunches	0	9	1	0	
Rhubarb ..... bundle	0	4	0	6	
Savoys ..... doz.	0	0	0	0	
Sea-kale ..... basket	0	0	0	0	
Shallots ..... lb.	0	8	0	0	
Spinach ..... bushel	2	0	3	0	
Tomatoes .... per doz.	3	0	4	0	
Turnips ..... bunch	0	6	0	0	
Vegetable Marrows dz.	0	0	0	0	

TRADE CATALOGUES RECEIVED.

E. G. Henderson & Son, Wellington Road, St. John's Wood, London, N.W.—*Catalogue of Stove and Greenhouse Plants, and Bedding Plants.*

Francis & Arthur Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of Bedding Plants, &c.*

J. Pringle, Wragby, Lincoln.—*Catalogue of Bedding Plants and Roses.*

William Hooper, New Wandsworth, London, S.W.—*Plant Catalogue.*

Hooper & Co., Covent Garden Market, London.—*Catalogue of British and Exotic Ferns.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

Books (*Clericus*).—Keane's "In-door Gardening," and Keane's "Out-door Gardening." If you enclose forty postage stamps with your address they will be sent free by post from this office.

Trees Opposite the Front of the Palace of St. Cloud in France (*W. H. C.*).—These, just now in bloom, and with leaves similar to the leaf of the Lilac, but with the bloom shaped like that of the Wistaria, but pink, are either Cercis siliquastrum or Cercis canadensis. Both are grown about Paris, and are very similar to each other.

White Zonal Pelargonium (*G. M. D.*).—If, as you say, your seedling is better than Madame Vaucher, it will be an acquisition. You had better send a cutting bearing trusses of the flowers to the Floral Committee of the Royal Horticultural Society.

Bundles of Asparagus (*J. S. A. G.*).—In Covent Garden Market there is no standard for a bundle of Asparagus. The regular market gardeners put 120 in the best, and 150 in the seconds; but it is brought to market in all quantities, from 25 to 200 in a bundle, by other growers.

Bean (*C. Marsden*).—We cannot decide whether it is the variety "Gem" until we have seen a pod.

Fasciated Asparagus (*John May*).—For a shoot of Asparagus to become flat, and much enlarged, and even to curl round like a ram's horn, as in the specimen you enclosed, is not uncommon. It is termed "fasciated" by botanists. We never saw so large a specimen before as that which you sent. It was fully 6 inches in circumference at the largest part, and weighed 8¾ ozs.

Pelargonium Sport (*C. Gilby*).—It is not at all uncommon for a cross-bred Pelargonium to produce a flower very distinct from all its other flowers. The sport probably resembles those of one of the parents of the plant.

Insect-destroying Powder (*J. Price*).—You must decide for yourself whether you keep the preparation secret, and endeavour to obtain a sale for it. There are many such preparations, and you will require a very considerable outlay before you can obtain attention to it; and even then we fear it would not acquire a remunerative sale.

Black Currant Bud Insect (*W. F.*).—The very minute white insects found in such vast numbers in the buds of Black Currant trees at the present time, in different parts of Scotland, prove to be the young state of a new species of Mite, with only four legs, and a long, cylindrical, fleshy body. Their fully grown state is not known. We can only recommend nipping off and burning those buds which appeared withered from the result of the attacks of these minute creatures, which completely destroy the embryo bloom.—W.

Mrs. Grieve Tricolored Pelargonium (*F.*).—The name of this Pelargonium has been changed to Victoria Regina.

Grapes Spotted (*A. B. C.*).—The small ulcer in your Grapes is called by gardeners "the spot." It is probably caused by the roots being not sufficiently active. If you can have the border a little warmer, and supply the roots once a-week with liquid manure heated to the temperature of the house, you will be likely to check the appearance of the disease. In No. 303 of this Journal is the recipe for more speedily skeletonising leaves.

Pear Trees in Pots Unproductive (*J. Douglas*).—Notwithstanding the particular description of your Pear trees in pots, we can form no idea of the cause of your want of success, unless the plants have been treated too kindly, and have been kept in a close instead of an open house. Nectarines and Plums will set freely in a close atmosphere at night, in which Apricots and Pears will drop and refuse to set.

Oxide of Iron in Water—Hygrometer (*Amateur*).—A small amount of oxide of iron would not, in our opinion, do any harm to Vines, but an extra quantity most likely would, and we would therefore avoid any but the smallest amount. We have not had so much experience with Vines; but we have had pot plants, such as tender Ferns, injured by using water from the hot-water pipes of a hothouse. We cannot tell you where you can have explicit information as to the use of a hygrometer in a vinery, but numerous articles and statements are interspersed in our volumes, and in the "Science and Practice of Gardening." Meanwhile, if you use evaporating-pans on your heating medium, and if in fresty and in bright sunny weather you keep floor, stage, and pathway moderately damp, the hygrometric state of the atmosphere of the vinery will be correct.

Sea-kale Leggy (*R. T. Huntingdon*).—Your plants, we imagine, are old, and have long stems with a crown at the end. We would not take the plants up and divide, though you may take off any stems that are long and straggling, and plant quite up to the crown. March being a good time to do it. We prefer making a new plantation of one-year-old plants in February, and, after allowing them a year's growth, forcing in the following year. Seed may be sown in March, and you will have plants by autumn large enough for making a new plantation, and by the second year fit for forcing. Sea-kale requires a good, rich, light, well-drained soil. We advise a new bed, either from sowing seed or planting young plants, in preference to suckers or divisions from the old plants, the old bed being left until the new one comes into bearing.

Pyramid Pear Trees Unfruitful (*E. H.*).—The most likely cause of the trees failing to set their fruit is their roots having penetrated into bad soil, or from some other cause not having perfected the flower-buds. We advise you to lift the trees carefully in autumn as soon as the leaves begin to fall, and to shorten any thick roots which go down or extend considerably from the stem, but preserve the fibres as far as possible. If the soil is heavy, plant on a slight mound, and mulch around the stems to the full extent of the roots with 3 inches of littery manure.

SMALL IRIS—PROPAGATING STRAWBERRIES (*H. N. O.*).—Your specimen is very imperfect. It seems be either Iris biglumis, ruthenica, or pumila cærulea, all of which will bear the thick, dwarf, pretty character you give your plant, making it so fit for a border-edging plant. With regard to Strawberry runners, the first runner formed is by no means uniformly barren, it is always the strongest; and the second and third runners, though weaker, are generally more fruitful. We would rather avoid taking runners from plants of last August which have not bloomed, and if other plants are plentiful we would not preserve such. As to plants of the age referred to which did not flower, but showed knots of embryo bloom, which came to nothing, you may keep the plants, also the runners from them, if desirable and scarce, as we often find that plants that show such a deficiency in fructification when forced, will fruit freely in the autumn and in the following season; but when there is abundant room for selection, it is just as well to avoid all such specimens in taking runners, as there is always the tendency, however small it may be, to continue such peculiarities. In large places it is next to impossible to attend to these little matters, whilst amateurs by doing so will ensure greater success.

SOIL FOR CAMELLIAS (*Anxious*).—The best soil for Camellias is a good light loam pared off a pasture to the thickness of about 1½ inch. This should be torn in pieces with the hand, and made rather small for such plants as yours. They ought to be potted now in seven-inch pots. The pots should be well drained, and the compost pressed rather tightly about the plants, keeping the collar of these rather high. Having no greenhouse you may place the plants in a cold frame, and after giving a gentle syringing and a good watering draw on the lights. The plants should have air from 8 A.M. until 5 P.M. by tilting the lights at back, and if the days are bright a thin mat thrown over the glass from 9 A.M. to 5 P.M. will keep the foliage from spotting. At five o'clock water, if necessary, and give a sprinkling overhead every day, shutting up the frame afterwards. This treatment may be continued until the plants have made their growth, when they should have air day and night, but about twice as much by day as night, and a slight shade may be afforded them during the hottest part of the day, otherwise afford abundance of air and all the light possible. Keep them well watered, but do not keep the soil in a saturated condition.

VIOLETS IN POTS (*Idem*).—The runners should be taken off and potted in small pots in a compost of turfy loam and leaf mould, with a free admixture of sand. The old plants may be divided, potted in small pots, and placed with the runners in a cold frame, a gentle watering being given. Sprinkle the plants overhead morning and evening, and keep them close and shaded until they are growing freely. You must then admit air and diminish the amount of shading, dispensing with it altogether in a few days, or as soon as they will bear sun. In July shift them into 4½-inch pots, and the most promising may, early in September, have six-inch pots. They should be well watered, but not excessively, and have a good watering overhead on the evenings of hot days. The lights should be drawn down after the plants become established. They are the better of a rather shady place from May to September. Winter in a cold frame, the pots being plunged in coal ashes, with air during mild weather, and the protection of mats over the lights during severe frosty weather.

CHINESE PRIMULAS AFTER FLOWERING (*Idem*).—They should be placed in a cold frame and have air plentifully. Towards the end of June you will see which are worth keeping, and these you may pot in the same-sized pots as before, most of the old soil being shaken from them. The lights should be drawn on closely, and a very light sprinkling of water given every evening, with shade from bright sun. When the plants recover from the potting admit air freely, and keep them well supplied with water. At night the lights may be drawn off and replaced in the morning, tilting them high at back, during dry hot weather, and when heavy rains occur. In August shift the plants into six-inch pots, pursuing the same treatment as before. The plants will bloom finely in autumn, all bloom stems showing before September being pinched off closely. It is only the best that are worth keeping, for seedlings are better for a late autumn and spring bloom.

MIMULUS MACULOSUS CULTURE (*Mimulus*).—We think your plants have gone off in consequence of mildew, caused by their close confinement in a cold frame; but your description being too incomplete to enable us to arrive at a satisfactory conclusion, we cannot advise. We are not quite sure that the plants were not destroyed by the severity of last winter's frost, for although plants might survive out of doors, others in a frame might be frozen, the former having such a good covering of snow. You may sow seeds in the beginning of August in order to raise plants for next year's bloom. Sow in a close cold frame, grow the plants on, pot them off when large enough, and winter them in small pots on a shelf near the glass in a greenhouse. The soil should be kept moist over the winter, and pot as often as the pots become filled with roots. They require protection from frost. We like M. maculosus best, but both are worth growing.

TODEA SUPERBA FRONDS BROWNED (*W. N.*).—The fronds sent appear to have been scorched by a current of cold, dry air. We think there is a deficiency of atmospheric moisture. We would advise a little more heat to be given, and the atmosphere to be kept more humid. The brownness does not arise from damp, nor yet closeness of atmosphere, but from dryness with cold.

CUTTING DOWN STEPHANOTIS (*F. H. F.*).—It is not desirable to cut back the shoots of this plant, as they flower very freely from moderately strong shoots. It is generally sufficient to thin out the old, weak, and useless shoots, and to train the young in their places. This should be done annually. As your plant is bare at bottom, cut it in to within a few inches of the soil, the shoots having dormant buds or eyes below where headed; but it will not flower next year. If you cut it back one-half it is likely it will be as bare of shoots at the bottom as ever. It should be plunged in the pit for some time to secure the breaking of the buds and a good growth. The latter cannot be too well ripened.

RAISING AUCUBA JAPONICA FROM SEED (*H. F. S.*).—The seed should be taken from the berry and sown in a compost of rather light loam. The pot or pan may be placed in a house with a moderate heat, as a warm greenhouse, and if the soil is moist the seeds will vegetate before August, or in spring. They germinate sooner if sown in a hotbed. If they do not vegetate at once keep the soil moist but not wet, and plants will come within twelve months. The seed is best sown as soon as it is ripe, or in March if purchased. Any of the principal nurserymen can supply you with the Verbenas you require.

PEACH AND NECTARINE BLOOMS FALLING PREMATURELY (*A Puzzled Man*).—With respect to the trees which failed in the orchard-house where others succeeded, though all were treated alike, we come to the conclusion, either that the trees which bloomed freely, but refused to set their fruit, were too dry at the roots, or the wood was more luxuriant, and therefore more imperfectly ripened last autumn than the trees that retained their fruit.

RUNNERS FROM UNFRUITFUL STRAWBERRIES (*Essex*).—We have taken runners from plants not fruiting, and they produced as good a crop as those from fruitful plants. We prefer, however, runners from fruitful plants. We are not so particular in this matter with the newer sorts, but you will do well to take runners from fruitful plants only.

ALOYSIA CITRIODORA PROPAGATION (*A. B.*).—Cuttings may be taken from the shoots of the current year, and such are best when from 3 to 6 inches in length, and when the wood is about half ripe, or a little hardened, but not woody. They should have three joints, and not exceeding four if short-jointed. The leaves should be removed from the lowest two joints, and the cutting be cut through with a sharp knife immediately below the lowest joint. A six-inch pot is large enough for a dozen cuttings. The pots should be drained to one-third their depth, and then be filled up with a compost of sandy loam, fibrous peat, and silver sand in equal parts, surfaced with silver sand. The cuttings are to be inserted in the sand up to the leaves or nearly so, and placed round the sides of the pot at about an inch apart. A gentle watering being given the pot should be plunged in a mild hotbed of from 70° to 75°, and slightly shaded from bright sun. The atmosphere should be moist, and the sand also, but not excessively so, otherwise the cuttings will damp off; if the atmosphere is close they will soon root, and be fit for potting-off singly in six weeks. Harden them off when well established.

COMPOST FOR CROTONS (*A Novice*).—We find them succeed admirably in a compost of turfy loam, sandy fibrous peat, and leaf mould in equal parts, with about one-sixth pieces of charcoal from the size of a hazel nut down to that of a pea, and a like quantity of silver sand. The loam may be torn in pieces with the hand, the pieces of root or wood should be picked out of the peat, and the leaf mould should be sifted with a three-quarter-inch riddle. The whole must be well mixed. The whole of the Crotons require a winter temperature of from 55° to 60° at night, and from 65° to 70° by day, and in summer a temperature of between 65° and 75°, with a rise of 10° or 15° with sun and air. They cannot have too much light. Liquid manure may be given when the pots are full of roots and the plants growing vigorously, it may be afforded once a-week. It is not necessary, however, for the growth of fine Crotons.

CUCUMBERS IN POTS (*Amateur*).—We have grown very fine Cucumbers in 12-inch pots, but we prefer them in those 15 inches in diameter. We put in the plants from the pots they are in after potting off, the plants being strong ones that have been stopped. The fruiting-pots are three parts filled with soil, and the plants put in in the centre and up to the seed leaves in the soil. As they grow more soil is added, and we fill to the rim at twice, the first earthing being given a fortnight after potting, and the second in ten days or so afterwards. In about another fortnight we give a top-dressing of rotten manure an inch thick, and water once or twice a-week with liquid manure.

GRUB (*C. C. E.*).—The grub which had destroyed the root of the Strawberry plant is the larva of the common May Bug, or Cockchafer, Melolontha vulgaris.

NAMES OF PLANTS (*A Subscriber*).—1, Azalea pontica; 2, Ranunculus aconitifolius, double-flowered variety; 3, Saxifraga granulata, double-flowered. (*A Constant Reader, and C. W.*).—The Bird Cherry, Cerasus padus. (*John*).—Halesia tetraptera. (*Clee Hill*).—The Horned Violet, Viola cornuta, a native of Spain, and introduced nearly a century ago. (*A. K.*).—Sophora (Edwardsia) microphylla; Andromeda sp. (*An Amateur*).—1, Nerium oleander; 2, Phytolacca decandra; 3, Solanum nigrum. (*C. M.*).—The Cytisus, growing as a standard budded upon a Laburnum is C. sessilifolius. (*Bradford*).—1, Picea pindrow; 2, Abies orientalis; 3, Abies Hudsonii; 4, Cephalotaxus drupacea; 5, Abies Douglasii.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending May 28th.

DATE.	BAROMETER.		THERMOMETER. Air.		THERMOMETER. Earth.		Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 22	30.046	29.919	48	28	53	51	N.E.	.12	Clear and cold; snow mixed with hail; overcast, rain.
Thurs. 23	30.101	29.937	51	25	51	50	N.E.	.00	Cold and boisterous; heavy clouds; fine, frosty.
Fri. .. 24	30.125	30.038	52	25	50	49	N.E.	.00	Heavy clouds; cloudy; fine; sharp frost at night.
Sat. .. 25	30.044	29.803	56	31	50	49	E.	.35	Slight dry haze; cloudy; densely overcast at night.
Sun. .. 26	29.640	29.533	71	43	50	49	S.	.02	Rain; fine; cloudy; fine at night.
Mon... 27	29.621	29.557	68	44	50	49	S.	.00	Heavy clouds; cloudy and fine; very fine at night.
Tues.. 28	29.807	29.759	70	47	50	50	S.W.	.00	Densely clouded; cloudy and fine; mild at night.
Mean	29.912	29.795	59.43	34.71	50.57	49.57	..	0.49	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BRAHMA POOTRAS.

I FIND I omitted the following notes in my communication which appeared in page 349.

The made Brahma Pootras appear to have the pea-comb, and to be without the vulture or falcon hock (certainly more vulture than falcon), but the pure-bred Brahmas are without the pea-comb, and are single-combed, with the vulture hock. The purest-bred Cochins or Shanghaes have the vulture hock, I think; and as to this, I differ from the "Standard of Excellence," which does not commend vulture hocks. I cannot help thinking, that the vulture hock is the proper distinctive characteristic of all feathered-legged poultry, as in the feathered-legged Bantams for instance, and I think that the legs of such sorts of birds are always much better feathered with the vulture hock than without it.

I see that Messrs. Gunson & Jefferson, of Whitehaven, in Cumberland, advertise the Birchen Grey Malays, which are, perhaps, imported by Mr. Jefferson, from the United States, but this I do not know; however, it is from these Malays that the pea-combed Brahmas were originally produced I believe, and it is the Malay, and not the Dorking expression which is thus given to Brahmas, as pea-combed Brahmas stand much nearer to Malays than to Dorkings. The long necks also come from the Malays, and the legs of the pea-combed birds are generally less feathered than those of the single-combed birds, more especially when the latter are vulture-hocked. The Dorking cross may, of course, exist, but I cannot say that I have ever much observed or suspected it, and if common it would, of course, be clearly evident to every close observer. The Americans having a great trade to Shanghae, imported many of the Shanghaes, and with Birchen-Grey Malay cocks these made the pea-combed Brahmas. The Birchen-Grey Malay breed are not uncommon in the United States I understand.

The pea-combed birds I consider to be the original cross made in America. The birds with the brownish markings, I think are the original Brahma Pootras, and those without the brown markings, and which have white, grey, dun, or black markings instead of brown, are the latest made or most cultivated strains of them. The stripe in the chickens is only brown in the brown-marked sorts, and is black in the grey and black-marked sorts, if pure-bred birds of the sort.—TREVOR, OTHERWISE NEWMARKET.

POULTRY-YARD FOR THE WHOLESALE PRODUCTION OF EGGS.

BEING like most of your readers an admirer of the feathered tribe, and always glad to receive and read the opinions and hear of the success of others through the medium of your Journal, I beg to send you the result of an experiment I made a little time ago.

For some years I considered it, as many do, a matter of doubt, whether poultry-keeping in a commercial point of view could be carried out with a profitable result. My experience has solved the question, and I am satisfied now of the practicability of an establishment being conducted with success, where enterprise, skill, and systematical management are combined.

My attention was first drawn to the possibility of making fowls profitable some few years ago, when I had occasion to leave home for a period of two months. My stock then consisted of about 150 Silver-pencilled Hamburghs. Not having any idea that I should be away so long, I did not give instructions to the man in charge what was to be done with the eggs. To my astonishment, on my return I found in a corner of a room an immense heap of eggs, resembling, all but in colour, potatoes shot out of a sack. This naturally suggested to me the possibility of such prolific hens being remunerative, and induced me to investigate by a carefully noted trial what their laying capabilities really were.

I commenced my trial with one hundred Pencilled Hamburghs, ninety-five hens and five cocks, in the month of February, and kept a debtor and creditor account till the end of July, six months, during which period they produced 11,000 eggs, the average being about five to each bird per week. A peck of mixed grain was allowed every day, and boiled flesh twice a-week. On Saturdays the mixed grain was substituted for ground oats and potatoes. Fresh water was supplied in a barrel, and kept continually running or dropping by means of a small tap. It will be seen by the following account that the nett profit of this lot for six months amounted to £18 10*s.* 6*d.* The average laying for the whole year was about two hundred eggs from each hen, and the expense of keeping the whole stock for that period was about £25 or £26:—

FROM FEBRUARY 1ST TO JULY 31ST, ONE HUNDRED SILVER-PENCILLED HAMBURGHS.

PAYMENTS.	£	*s.*	*d.*	RECEIPTS.	£	*s.*	*d.*
Barley and wheat	7	0	0	Sold 11,000 at 5*s.* per 100	27	10	0
Oats	1	2	0	Manure	0	10	0
Flesh	0	14	0				
Potatoes	0	10	0				
Sand and chalk	0	3	6				
Profit	18	10	6				
	28	0	0		28	0	0

As the eggs of this breed are small, I last year crossed them with a Spanish cock, my object being to have the best layers as well as non-sitters and a moderate-sized marketable egg.

Supposing instead of my having kept only these one hundred, I had a farm of 10,000 hens, what would be the result? It would very naturally be remarked, so many fowls together would never answer; but I say with proper management they would in our part of the country; and in many parts of England (I should prefer the midland counties), there are thousands of acres of uncultivated sandy heath land within five or six miles of some of our largest manufacturing towns, on which small hen-houses might be built, sufficiently large to contain from 100 to 150 fowls each, extended over acres of land, allowing an acre for each one hundred birds, with proper cottages and outbuildings for the keepers. One hundred acres of this land could be hired on a lease at a nominal rent, and the droppings of the fowls would improve the soil and make the property more valuable.

The following estimate will show the amount of capital and the profit on a stock of 10,000 hens of the cross-breed:—

PAYMENTS.	£	*s.*	*d.*	RECEIPTS.	£	*s.*	*d.*
Cost of 10,000 breeding hens at 2*s.* each	1000	0	0	Value of stock	2210	0	0
Building eighty hen-houses, two cottages, and outbuildings	1100	0	0	Produce eggs, 2,000,000	5000	0	0
Horse, cart, mincing-mill, and tools	110	0	0	Sale of dung	80	0	0
Horse keep	50	0	0	,, bones	18	0	0
Sundry losses	100	0	0	Sale of old hens after the first five years, at 1*s.* each	100	0	0
Cost of corn	2000	0	0				
Flesh, &c.	50	0	0				
Rent of 100 acres of waste land	25	0	0				
Salary to Manager	100	0	0				
Wages to men and boys	100	0	0				
Cost of breeding 2000 hens yearly to supply stock	200	0	0				
Coals, package, &c.	100	0	0				
Profit	2473	0	0				
	7408	0	0		7408	0	0

I believe the result of the above estimate can alone be accomplished by non-sitting hens. Eggs being the only source of profit, the most prolific layers should, therefore, be selected.

I should myself be very willing to join a party of enterprising gentlemen in an undertaking of this description, as I am confident the result would be satisfactory. A capital of £3000 would be sufficient to carry on a business like the above, which would yield over 75 per cent.

I should like some of your readers who are acquainted with this breed to say if I have overstated its laying capabilities, and whether my suggestions are impossible to be carried out, if so, the reason why.—TOBY.

WOODEN PORTABLE POULTRY-HOUSES.

THESE are desirable under certain circumstances. They can be moved about so as allow the fowls to have fresh runs in distant fields. Lady Holmesdale employs them, and shifts them when deemed needful to different parts of Linton Park. Mr. Schröder, the inventor of an incubator, has designed several. The following are thus pourtrayed and described by him.

"The Single Poultry-house (*fig.* 1), is constructed with three separate compartments—viz., for roosting, laying, and shelter

from weather, and will be found most desirable for general purposes. The roosting portion occupies the whole area of the upper floor; beneath this are laying boxes, occupying one-third of the ground floor, fitted with sliding doors, by which means a broody hen can be shut in for sitting, without the possibility of being

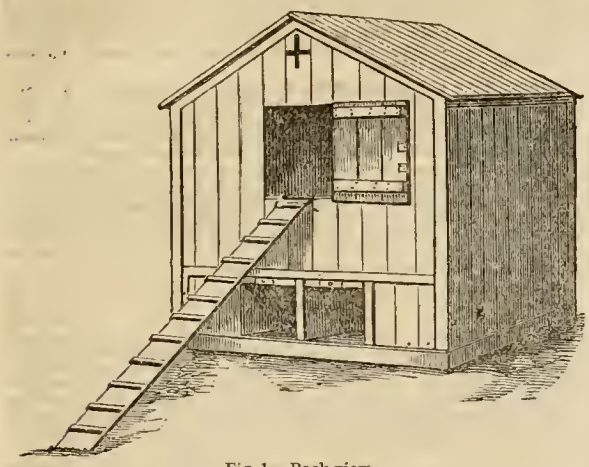


Fig. 1.—Back view.

disturbed. The remainder of the ground floor, open at back, is a general shelter for the birds, providing also the dry dusting-bath, so necessary to the well-doing of poultry. This house gives great command over the birds, is well ventilated, and light and elegant in appearance. Dimensions, 6 feet square. Height, 5 feet to eaves, 6½ feet to ridge.

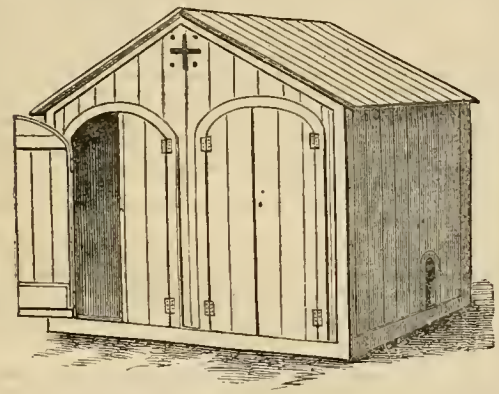


Fig. 2.

"The Double Poultry-house (*fig.* 2), comprises two houses under one roof, on one floor; and where more than one variety of fowls is kept, will be found a desideratum. The building has a division down the centre, forming thus two houses alongside one another, with nests arranged at the back. Trap doors at each side of the building open into separate yards. This house presents a very elegant appearance. Dimensions, 6 feet square. Height 5 feet to eaves, 6½ feet to ridge."

LIGURIAN DISAPPOINTMENTS.

In my few notes on bees, which appeared in "our Journal" of 11th December, 1866, I mentioned having introduced two stocks of Ligurians into my apiary during the preceding autumn, with what results the following narrative will show.

The first stock I received was purchased of Messrs. Neighbour & Sons, and arrived during very warm weather in the middle of September, 1865; they reached me in good condition, and passed the winter safely, were forward in the spring, but although with such a cold May as that of last year I did not attempt increasing them until the 30th of that month, I had by the middle of June three stocks formed from them. I then, for certain reasons, ceased to multiply them, and well was it that I did so, for the original stock eventually died of foul brood during the following winter, and all the stocks formed from it have fallen a prey to the same dire disease. A hybridised queen, which with another was received last October from Mr. Woodbury, also perished during the severe weather in March of the present year, leaving honey and combs useless. Messrs. Neighbour, on being communicated with on the subject, at once offered to exchange the infected stock for a recently imported one with a pure young fertile queen. This stock I received about the middle of last month (April), in good condition. The queen breeds well-marked workers, and a few beautiful Ligurian drones have appeared. I may add that my apiary was originally, and I have every reason to believe that it now is, perfectly free from the disease thus imported into it, and which has proved itself so fatal.

The other stock of Ligurians was purchased of Mr. Carr, of Newton Heath, near Manchester; it arrived early in October, 1865, robbed of its heavy honeycombs, so that it might travel better; yet in spite of this precaution a great many bees lost their lives during the journey. The remaining bees were headed by a diminutive but good-coloured queen, which bred good-coloured workers in a small eight-framed box 12 inches square by 9 deep, which, as well as the frames, was painted inside and out! The bees, as might have been expected, never did well in such a toy, coated as it was with oil paint. After taking in their autumnal store of food they were, in spite of upward ventilation, much troubled throughout the winter with internal moisture, and in the spring were in a wretched condition. The queen did not begin to lay until the middle of April, and during the summer never filled more than the middle of three or four of the frames with brood, so that it was the end of July before the stock was in any way healthy or strong. The honey season being then over, I had to give it about 14 lbs. of food before it was safe for the winter. The queen of this wonderfully prolific strain of Ligurians ceased laying about the end of August! Frequent examination during the spring of this year only revealed the mortifying fact that this queen, which was advertised in your Journal as having been bred from the "most beautiful strain of Ligurians to be found in Europe," had not laid a single egg! I know not how prolific she might have been before she came here, but after she came into my possession she certainly showed none of those great breeding powers attributed to Mr. Carr's strain of Ligurians, and up to the 29th of April had not commenced egg-laying. I therefore took her from her remaining subjects (about twenty in number), and placed her at the head of a strong stock of black bees, whose queen had been removed eight days and royal cells one day previously. She was well received, and lived in the hive until about the 3rd of May, during which time she never laid an egg, and was ultimately missing on the evening on that day. So ended my Ligurians. The case and particulars were duly reported to Mr. Carr, but I have never received any answer from him.

I have since obtained a stock of pure Ligurians from Mr. Woodbury, which, all being well, will, with the other sent by Messrs. Neighbour, shortly increase the Ligurian element in the apiary of—J. B., *Bracken Hill.*

[I am very sorry to learn from the foregoing narrative that Messrs. Neighbours' bees are infected with foul brood, and trust that "J. B." is correct in believing that none of the seeds of this insidious malady are lurking either in the second stock received from them, or in his own apiary. Although it is now approaching four years since I finally got rid of it, I have too vivid a recollection of my own woeful experience of foul brood not to sympathise most sincerely with any bee-keeper whose apiary may be suffering from so terrible a disease. I trust the Ligurian stock which "J. B." has recently received from me, and which I know to be thoroughly healthy as well as perfectly pure, may do something towards compensating him for his previous disappointments; but it does appear to me that Mr. Carr should either refund the money paid for the abortive Ligurians, or replace them with a good stock in a properly constructed hive.—A Devonshire Bee-keeper.]

MEAD, METHEGLIN, AND HYDROMEL.

A correspondent of The Journal of Horticulture (May 9th), inquires for receipts for making mead and metheglin. I enclose some taken from an old book of receipts of Sir Kenelm Digby's, published in the year 1675, by Henry Brome.

"*Mr. Webbe's Meath.*—Master Webbe, who maketh the king's meath, ordereth it thus:—I take as much of Hyde Park water as will make an

hogshead of meath, boil in it abont 6 ozs. of best hops for about half an hour; by that time the water will have drawn out the strength of the hops. Then skim them clean off; then dissolve in it warm, about one part of honey to six of water; have and beat it until the honey be perfectly dissolved; then boil it, beginning gently till all the scum be risen and scummed away. It must boil in all about two hours. Half an hour before you end your boiling put in some rosemary tops, thyme, sweet marjoram, one sprig of mint; in all about half a handful, and as much sweet-briar leaves as all these; in all about a handful of herbs, and 2 ozs. of sliced ginger and 1 oz. of bruised cinnamon. Let these boil about half an hour, then scum them clean away, and presently let the liquor run through a strainer cloth into a keever of wood to cool and settle. When you see it is very clear, lade out the liquor into another keever carefully, not to raise the settlings from the bottom. When it is cool and perfect clear, then run it into a cask that has been used for sack, and stop it up close, having an eye to give it vent if it should work. When it hath wrought and is well settled, which may be in two months or ten weeks, draw it into glass bottles, and it will be ready to drink in a month or two. If you would have it sooner ready to drink you may work it with a little yeast."

"*White Metheglin of my Lady Hungerford, which is exceedingly praised.*—Take your honey and mix it with fair water until the honey be quite dissolved. If it will bear an egg to be above the liquor, the breadth of a groat, it is strong enough; if not, put more honey to it till it be so strong, then boil it, and when skimmed put into it one handful of strawberry leaves, and half a handful of violet leaves, and half as much sorrel, a dozen tops of rosemary, four or five tops of balm leaves, a handful of hart's-tongue and liverwort, a little thyme and red sage. Let it boil an hour, then put it into a wooden vessel, where it will stand till it be quite cool; then put it into the barrel, then take half an ounce of cloves, as much nutmeg, four or five races of ginger; bruise it and put it into a fine bag with a stone to make it sink, then stop very close. The herbs and spices are in proportion for six gallons."

"*A Receipt to Make Metheglin as It is Made at Antwerp.*—Contains one measure of honey to three of water; 1 lb. of hops to every barrel of meath; 1 lb. of best raisins to every gallon of water."

"*Strong Mead.*—Take one measure of honey, and dissolve it in four of water, beating it long up and down with clean wooden ladles. The next day boil it gently, scumming it all the while till no more scum riseth. The rule of its being boiled enough is, when it yieldeth no more scum, and heareth an egg. Then pour it out of the kettle into wooden vessels, and let it remain there until it be almost cold. Then turn it into a vessel where sack hath been."

"*To Make Honey Drink.*—Two quarts of water, 1 lb. of honey. Boil and skim it. Bottle it next day, putting in each bottle four or five, cloves and as many races of ginger. Stop it close, and it will be ready to drink in ten days."

"*Hydromel*, as it was made weak for the Queen Mother, and was exceedingly liked by everybody.—Take eighteen quarts of water, and one part of honey. When the water is warm put the honey to it. Continue skimming it as long as any scum will rise. Then put in one race of ginger, four cloves, and a little sprig of green rosemary. Let these boil one hour, then set to cool till it be blood warm, and then put to it a spoonful of ale yeast. When it is worked up, put it into a vessel of fit size, and after two or three days bottle it. You may drink it after six weeks."

OUR LETTER BOX.

Chicken Dead in the Shell (*B. B.*).—If out of nearly three hundred you have only lost two chickens in hatching, you have been indeed fortunate. The chicken enclosed to us is malformed, and would not have lived if it had extricated itself from the shell. The other you mention was trampled upon by the hen probably.

Books (*M. H. L.*).—"The Poultry-Keepers' Manual." You can have it free by post from our office, if you enclose your address and 7*s.* 10*d.* in postage stamps.

Hens not Laying (*M. H. L.*).—Your hens are feverish. Discontinue the whole corn for a time, give meal instead, and feed plentifully on lettuce. If they have no grass run let them have one, and they will soon lay. Nothing is a more certain sign of fever than for the hen to sit so long on the nest without laying. If you cannot give them a grass run, give them large sods of growing grass.

Eggs not Hatching (*Idem*).—The eggs were what is called clear, and would have remained the same had the hen sat three months. They were not fecundated, and therefore were not susceptible of change. The cause of failure was no doubt the same in both cases, or it may be in the first place the eggs were frozen. In that case they would produce nothing, but they would change.

La Flèche, Crève Cœur, and Houdan Fowls (*La Flèche*).—Our experience of the French breeds is that the Houdan is the really hardy bird. La Flèche and Crève Cœur seem subject to epidemics. Some time since all our cocks died off, young and old. We do not consider them strong, but the hens are stronger than the cocks. The best treatment we have discovered is to withhold water, allowing them only a very limited quantity twice a-day. We some time since visited the parts of France where most of the poultry is bred, and we were confirmed in our opinion that the cocks are weaker than the hens, by being told the same observation had been made there. As we are bound to give all our experiences, and happy to do so, we can say that at an establishment in Wales the La Flèche have succeeded better than any fowl had ever done previously. We believe La Flèche chickens want more food than any other, and the old birds are great eaters.

Game Cock's Bill Damaged (*North Lancashire*).—In competition half as close as it generally is in the Game classes in your county, the slightest defect, even an accidental one, is sufficient to turn the scale against you. The perfect can hardly win, the faulty cannot hope for success.

Colour of Dorking Chickens when First Hatched (*A. B. B.*).—It is an old saying that any colour is admissible and correct in a coloured Dorking, save black and white. Many chickens hatched apparently white become grey and silver grey, and apparently black ones are only the dark birds that are so much admired both for weight and beauty. We have never seen a Black Dorking.

Millet Seed and Millet Meal as Food for Poultry (*B. B.*).—We have tried millet and millet meal for fowls, but it did not answer, as they disliked it. It makes the heaviest meal of anything we have tried. The French use meal made of buckwheat. We think both millet and buckwheat are better for fattening than for making flesh and muscle.

Combs of Dorking Hens (*E. M. B. A.*).—The comb of a Dorking hen is of small importance. It should be moderate in size, well serrated, and should hang over the side. Those who are skilled in, and very observant of poultry, look "awry" on very upright combs in hens. The ladies who delight in such distinctions generally go on till they crow. For leg-weakness give nourishing diet, plenty of green food, and four grains of citrate of iron daily until the bird's strength is improved.

Cochin-Chinas not Laying (*Kitty*).—We are very unbelievers in the assertions that are made that three or four healthy hens do not lay at this time of year. Our belief is that your hens lay and eat their eggs. It is a simple impossibility that four Cochin-China hens should go on without laying till now, and you are highly favoured that they are not broody, or at least three of them. Our fate is very different; when we went into one of our houses this morning each corner was tenanted by three or four hens, swelled to monstrous dimensions, and endeavouring to produce life in the largest stones they could scrape together. We were glad their language could not be interpreted when they remonstrated against being moved.

Bantams (*A. B. C.*).—Your White Tropical Bantams are the Japanese Silky fowl, or an offshoot from it. Any dealer can procure them for you.

Pigeons (*H.*).—We have not seen more than the first part of the work on Pigeons, by Mr. W. B. Tegetmeier and Mr. Harrison Weir; but a disappointed purchaser writes to us that "the second part contains twenty-two pages and a half, of which ten pages and a half are quotations, and the remaining twelve contain nothing new. If Mr. Tegetmeier makes the future parts like the two I have, the work will be a pretty picture book, but not one from which the experienced fancier will learn anything; still I rejoice at the publication of 'Pigeons,' as it will increase, I trust, the number of admirers of these beautiful birds. There are four illustrations—a pair of Frillbacks, those uncomfortable-looking Pigeons which, like the sight of Frizzled Fowls, fill one with an uncontrollable longing to smooth their feathers; then a pair of Fantails, in which Mr. Harrison Weir's skill is seen very favourably; then a pair of Blue Brunswicks and a pair of Black Priests, very priestly-looking indeed, with M.B. waistcoats and shaven crowns. I fear we are doomed to an increased invasion of German Toys, mere birds of feather. I wait anxiously to see, not the drawing, for that is sure to be excellent, but the colouring of the Almond Tumblers, which will test more than any variety the powers of Leighton Brothers. In how many bird books the colours are too bright! Morriss's 'British Birds' is a glaring instance of this fault, and it is one which a colour artist should try to avoid."

Rabbits (*A. H. E.*).—Your Rabbits are unusually good, and well developed for their age.

Canaries Laying Shell-less Eggs (*Suthings*).—Place a piece of old mortar in the cage, and keep it there while the birds are breeding. One cock and two hens will do very well in the same cage. Birds in a cage and placed in the aviary where others are flying loose will make no difference to their breeding. Canaries will endure cold in winter in the house without fire, either in cages or loose in a room; but care should be taken that there be no draught, and that they be not removed suddenly from a warm place to a cold one.

Ferrets (*A Constant Reader*).—We never heard of any difficulty in keeping them. Any raw meat, birds, &c.; about the size of a mouse daily is enough for one. They should be kept very clean, and the floor of the hutch covered thickly with sand, or they become footsore.

Payne's Improved Cottage Hive (——).—It can be obtained of Messrs. Neighbour, High Holborn.

Questions on Bees (*Stupid*).—1, Langstroth on the Hive and Honey Bee, published in America at 1½ dollar, and procurable in England for about 7*s.* 6*d.* 2, We do not think it matters much if the ventilators in bee glasses do not reach to within 2 inches of the bottom.

Small Bee (*A South Lancashire Bee-keeper*).—The small bee is named Andrena albicans, and is common throughout England at this season.

Dressing Hives and Feeding Swarms (*J. M. B. K.*).—We know not how far it may be usual to dress or anoint hives intended for swarms with either salt or sugar; but we believe it to be a custom more honoured in the breach than the observance, being of opinion with Mr. Taylor, that "a dry clean hive is preferable." We do not, however, consider that the dressing with sugar and salt injured the cast which issued on the 19th inst.; the fact, doubtless, being that the bees are dying, if not already dead, from starvation, owing to the recent inclemency of the weather.

POULTRY MARKET.—May 29.

We have still a dearth of poultry, and consequent high prices. We are suffering from the terrible winter, and the poultry we are waiting for makes little progress in this uncertain and trying weather.

	s. d.	s. d.		s. d.	s. d.
Large Fowls	6 0	to 6 6	Pheasants	0 0	to 0 0
Smaller do.	4 0	4 6	Partridges	0 0	0 0
Chickens	3 0	3 6	Grouse	0 0	0 0
Goslings	6 0	7 0	Guinea Fowls	0 0	0 0
Ducklings	2 6	3 0	Rabbits	1 4	1 5
Pigeons	0 8	0 9	Wild do.	0 8	0 9

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 6—12, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
						Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
6	Th	Meeting of Linnean and Royal Societies.	69.7	47.7	58.7	21	47 af 3	9 af 8	37 af 6	7 af 6	4	1 42	157
7	F		69.1	47.0	58.0	25	47 3	10 8	4 7	19 7	5	1 31	158
8	S	Royal Horticultural Society's Great Show	70.4	46.3	58.6	15	46 3	11 8	32 7	31 8	6	1 20	159
9	Sun	Whit Sunday. [closes.	70.3	47.4	58.9	20	46 3	12 8	0 8	44 9	☽	1 8	160
10	M	Whit Monday.	71.3	47.2	59.2	19	45 3	13 8	32 8	58 10	8	0 57	161
11	Tu	Whit Tuesday.	71.7	47.6	59.6	13	45 3	13 8	8 9	morn.	9	0 45	162
12	W	Meeting of Microscopical Society.	70.9	46.1	58.5	19	45 3	14 8	50 9	10 0	10	0 33	163

From observations taken near London during the last forty years, the average day temperature of the week is 70.5°; and its night temperature 47.1°. The greatest heat was 90°, on the 6th and 7th, 1846; and 12th and 13th, 1842; and the lowest cold 30°, on the 11th, 1865. The greatest fall of rain was 1.48 inch.

WHAT CAUSES THE VARIEGATION OF LEAVES?

THIS day I have sent you a common Cabbage with the leaves white-edged; not that I think it of any service, but because there is just now so much talk of the means of obtaining variegation in the foliage of plants, and so many opinions are given.

Some think that our Tricolored Pelargoniums are the result of chance, whilst others affirm them to be the result of careful cross-breeding. My own experience leads me to form the latter idea; but the question to me is, Does the plant absorb the colouring matter from the soil in which such plant is grown? If so, can the colour of the foliage of plants be altered at pleasure, or at the cultivator's will, like the bloom of the Hydrangea? If so, can colouring matter be so supplied as to form any distinct-coloured foliage desired?

Most of us know well enough how high cultivation and rank luxuriant growth spoils the variegation of the foliage, and induces a hue of dark olive green, and we also know how difficult it is to fix variegation sometimes.

In my opinion very little practical information indeed has been given as to the law of Nature, if indeed it be a law, which causes and affects variegation. In the case of this Cabbage, Was the variegation in the germ of the seed, or was it in the soil? Would it have been so variegated grown in any other place or position? Nothing has been done artificially to cause it to present the appearance which it does, neither is the leaf of any other plant in the whole square affected in any way.

When any one can take the seed of a plant, say of a Brassica, saved carefully from a pure green plant not impregnated with any other, and can grow from seed so saved according to his will variegated plants—then, and not till then, shall I think we have any practical information on the subject. Many of your readers will, of course, differ from me.—F. Flitton.

[Our correspondent is somewhat unreasonable on this mysterious subject. Florists have some "practical information" relative to the production of variety in the forms and colours of flowers, although they could not take a seed and compel it to produce a variation desired. Variation in colour, whether in animals or plants, is one of the many phenomena in Nature concerning which there speedily arises a "Why," to which we cannot assign the "Because." Why colour varies in the coats of horses and of other domesticated animals—for it is only among those domesticated that such variation occurs—defies explanation; and similarly inexplicable is it why some Roses are red, some white, and some "York and Lancaster." So, also, in the case of leaves always naturally coloured, as those of Caladium bicolor, Orchis maculata, and many others, we know not why in one part the colouring should differ from that in another part. Yet that these phenomena are unexplained is no more a subject for surprise than that we cannot tell why eyes are sometimes blue and sometimes hazel. We do, however, know some facts connected with the variegation of leaves, and they are worth gathering together.

In the first place, it is well to remember that leaves and flowers are readily changed into each other—that is, a bud may be made to produce either leaves or flowers. "I have," says Mr. Knight, "repeatedly ascertained that a blossom of a Pear or Apple tree contains parts which previously existed as the rudiments of five leaves. I have often succeeded in obtaining every gradation of monstrosity of form, from five congregated leaves to the perfect blossom of the Pear tree." So that the elaborating vessels of a leaf are capable of producing secretions coloured otherwise than green is not a matter for astonishment.

Now, the most usual variegation in leaves is some portion of them being white. Dr. Morren, Professor of Botany at Liège, examined microscopically the white portions of the variegated leaves of Euonymus japonicus, Syringa vulgaris, and other plants, and he uniformly found that they had cells filled with air or gas in immediate contact with the chlorophyll, or colouring substance; but the parts of the leaves which were green had no such cells filled with gas in contact with the chlorophyll. Unfortunately that gas was not analysed, but he concluded from his examinations that a corresponding whiteness of the chlorophyll accompanied that gas. We believe that that gas is oxygen, for Sennebier ascertained that the discolored parts of leaves are incapable of exhaling oxygen, which the green parts do exhale abundantly when exposed to light. Now, oxygen gas is a great bleaching agent, and its presence in excess would cause the whiteness. As an example, from a green part of a leaf of the Cabbage sent to us by Mr. Flitton, we removed the cuticle and applied a solution of chloride of calcium (bleaching powder), and the green chlorophyll speedily acquired the colour of the white variegated parts; now, such bleaching was effected by highly oxidising the chlorophyll.

An excess of oxygen, however, sometimes generates an acid in leaves, and this acid, varying in different leaves, and coming in contact with different substances in their sap, differs in the colour which it produces. M. Macaire Princep made experiments upon this subject. He found that leaves of deciduous trees in autumn absorb oxygen when exposed to light, and form an acid, which changes the green of the chlorophyll first to yellow and then to red. He also found that by soaking a red leaf in a solution of potash it became again green, evidently in consequence of the potash neutralising the acid in the leaf. He found this the case even in the red under-surface of a Cyclamen leaf. He carried his researches further, and concluded from them that the red and yellow colours of flowers arise from chlorophyll being altered, as it is altered, when leaves assume their autumnal tints.

Chemical research can go no further, for it cannot unveil Nature at her work, and reveal how she manages that cells in juxtaposition shall some produce secretions that whiten, others that redden, and a third set that render the chlorophyll yellow. The chemist's progress is similarly barred in the animal creation, for he cannot explain the somewhat similar phenomena of the varied colours in piebald horses, brindled cows, and tortoiseshell cats.

Yet we can conceive something of the agency employed. A very slight alteration in the chemical composition of a vegetable secretion totally changes its qualities. Tannic acid differs only from malic and tartaric acids in having a little less oxygen. Yet tannic acid with the iron in sap strikes a black colour, which the other two acids do not. This may be the source of the horseshoe in Pelargonium leaves. Then, again, ammonia, present in all cultivated plants and soils, changes, says Liebig, into splendid blue or red colouring matters when it comes in contact with some bitter principles, or even tasteless matter, as that of Roccella tinctoria.

If a departure from usual colour is a symptom of disease, then variegation is such a symptom; but if disease is properly defined as a condition where one or more functions of the plant are altogether impeded, then it is open to doubt whether variegation satisfies the definition. We know that variegated plants are for the most part as hardy and as prolific as those with leaves of the normal colour.

It has been said that we shall never have a blue Pelargonium, but we do not include this in our list of impossibilities. There is no evidence to show that Pelargoniums are excluded from what has been called the cyanic series of colours. The blotch of some varieties tends towards a purple tint, and if a Pelargonium could be fertilised by the pollen of some one of its blue-flowered relatives, the Geraniums, we think the colour desired would be obtained.]

ROSES ON MANETTI STOCKS.

It was with much surprise that I saw in a monthly contemporary an assertion that "Roses on the much-vaunted Manetti have not escaped [the effects of the severe weather] notwithstanding that they present no difficulty in the way of giving protection." It is certain that they present no more difficulty in this respect than those on their own roots, and not so much as those in the form of standards, which when grown in considerable numbers, and on account of their form, must almost of necessity be left unprotected; hence they have been killed by thousands. Not so with Manetti Roses, except where, as Mr. Radclyffe says, people have not taken the pains to keep them out of mischief; but here, as with him, the case is totally different. Out of 300 plants on the Manetti stock, I have lost but three, and these were small weak plants that probably would have died under any circumstances. They were propagated by artificial heat under glass, planted out last summer, but made no growth. Their names were Xavier Olibo, Madame William Paul, and Souvenir de Bernardin de St. Pierre.

All the beds of Manetti Roses, with a trifling exception, were covered last September with loose stable litter about 3 or 4 inches thick. This, with 12 inches of snow, was the protection afforded, but it was very effectual. Scarcely any portions of the plants below the snow-line were killed, nor were the exposed shoots above it injured generally. The latest growth and the ends of the shoots suffered. Owing to peculiarity of situation, the frost in January was less severe here than in many places.

The cold of January being followed by mild and even warm weather in February, not only Roses, but every kind of plant began to break into foliage with the rapidity that always succeeds severe temperature. The thermometer frequently stood at 50°, and the night temperature was comparatively high. Then succeeded the check in March, which apparently told more than the previous ordeal in January; for many plants, especially standard Roses, which seemed to be alive and pushing, were thrown back by the abrupt change of weather. In the first week in May the thermometer sometimes indicated from 85° to 90° in the sun; from the 21st to the 25th there was frost every night; on the 22nd the ground was white with snow for some minutes about 12.30 in the middle of the day, and again in the afternoon. These violent and sudden changes have already marked the present year as an exceptional one that will long be remembered.

It is not surprising that Roses have suffered much, but the losses would undoubtedly have been less if they had been grown in a form in which they could be more or less protected; and that protection afforded them, they may be preserved through the severest winter if a little care be bestowed upon them. I have not many Tea Roses, but I have not lost one. Noisettes trained against the house and too large to be covered have suffered most. Solfaterre and Ophirie have lost three-fourths of their wood. Isabella Gray and Maréchal Niel (smaller plants) have not had any of their shoots killed, but they are breaking languidly, and indicate an impatience of the many checks they have received. Cloth of Gold I have cut down to the ground; though not killed, the wood was unsound. Céline Forestier and Gloire de Dijon (twenty plants each) are uninjured, and are now showing bloom-buds. Triomphe de Rennes, ten plants slightly injured, one killed.

Rose amateurs must follow Mr. Radclyffe's advice if they wish to have good Roses; they must not be afraid to use the pruning-knife freely. All imperfect wood should be cut away. No good ever results from leaving half-dead wood and unsound shoots: hopes founded upon such are false hopes.

Manetti Roses, as above stated, are safe. I have never allowed them to become large plants. Close pruning is best on light soils. They make shoots from 4 to 6 feet long in a season; but I rarely leave them higher than 3 feet. The latest-formed foliage has slightly suffered from the frosts of May 21 and succeeding days, being a little blistered, but not destroyed. I have seen some, where the frost was more severe, shrivelled and black like tinder: the first blooms are therefore lost. Mine have escaped. I enclose specimens of leaves fully developed prior to the late frosts taken from Manetti plants exposed to all the vicissitudes of the weather.

Of briar Roses I have little to say, regarding them as things of the past where Roses can be better grown on their own roots or on the Manetti; and here, where they should be discarded, I retain them only till such time as I can supply their places with others in either of these forms. The mortality has been considerable—about sixty dead or rendered useless out of five hundred. Maréchal Vaillant, Gloire de Dijon, Céline Forestier, Charles Lawson, and Coupe d'Hébé do well as standards.

I wish to correct a misstatement in my report on Messrs. Ivery's Nursery, at p. 341. For Cedrus Libani to be described as nearly every plant killed or so severely injured as to be worthless, is not quite true; many are greatly injured and some are quite killed, but there are some uninjured. Of Cupressus sempervirens, no plants have escaped above the snow-line. The large specimens of Pinus excelsa that I thought were dead, are not so; they are very severely injured. Arbutus photinifolia, Milleri, magnifica, and others are all killed above the snow-line, and much injured below it.—Adolphus H. Kent.

THE FROSTS OF JANUARY, AND THE FROSTS OF MAY.

The damage done by the frosts last week, particularly on Friday night, or Saturday morning, (May 24th-25th) when the temperature fell 10° below freezing, makes me look back upon the winter's frost as a trifling affair of the past. The young wood of the Abies, Piceas, Hollies, Laurels, Azaleas, Rhododendrons, Ash, Beech, Oak, Chestnut, &c., is nearly all killed. Potatoes and Dwarf Kidney Beans are killed to the ground. All the kinds of Brassica I am saving for seed (excepting my Eclipse Broccoli, which is now in fine head), are at present in bloom, and I think are very much injured. The Strawberry bloom is nearly all destroyed. Gooseberries and Currants are fast falling off; the Cherries are frozen through, and all other fruit severely injured. I never saw such destruction by frost before.—John Cattell, *Nursery, Westerham.*

The following is a list of some of the consequences of last January's frosts at Mr. Cattell's nursery:—

Abies Douglasii, only the foliage slightly injured.

Abies Mormda, very much injured, portions of the wood killed back.

Araucaria imbricata, being on elevated ground, only slightly injured.

Cedrus deodara, in one portion of the grounds, very much injured, some plants being nearly killed, in other parts more elevated not injured at all.

Cupressus macrocarpa, nearly all killed down to the snow line.

Pinus insignis, all large plants quite killed.

Podocarpus andina, very much injured.

Taxodium sempervirens, the growth of last year mostly destroyed.

Irish Yew, foliage of many much injured.

Arbutus, in some portions of the grounds quite killed down, in more elevated parts slightly injured.

Laurustinus, the same.

Aucuba japonica, slightly injured.

Sweet Bay, killed down to the ground.

Holly, Variegated, very much injured, some fine standards quite killed.

Holly, Common Green, some nearly killed.

Laurels, Common, the foliage much destroyed, in some cases the wood killed.

Oaks, Evergreen, some nearly killed.

Rhododendrons, some kinds nearly destroyed.

Sorts of Pears that suffered most, but which were worked on Quince—Beurré d'Aremberg, Duchesse d'Angoulême, Seckle, Louise Bonne of Jersey, and Fondante d'Automne.

Roses, of all classes, have suffered severely. Of standard Hybrid Perpetuals it is difficult to say which is the most hardy, for those which were supposed to have escaped have lately died, being so much injured they could not recover. The Moss kinds seem to have suffered least. The Hybrid Bourbons and Hybrid Chinas have been very severely injured; some of the Climbers—Ayrshire, &c., were slightly injured.

Lowest temperature registered 7° below zero—that is, 39° of frost, January 4th, 5th, and 6th.

ORIGIN OF VARIEGATED PELARGONIUMS.

[The following is the paper on this subject which Mr. Wills intended to have read at the Royal Horticultural Society's Meeting, May 21st.]

My intention was, had there been time, to have brought the whole of my specimens of the old Pelargoniums before the meeting. They would have illustrated the progress that has been made from the year 1710 to the present time. I have to thank Mr. Davies, gardener to Lord Bridport, for several of these curious old forms. One of them, Miller's old variegated, is especially interesting, as being the first variegated Pelargonium ever seen in this country, and probably the parent of all the beautiful variegated forms we see around us on this occasion. I have also in my collection plants of two of the wild Cape Pelargoniums—namely, Pelargonium inquinans, the parent of all the plain-leaved section, and the wild Pelargonium zonale, which is the parent of all the zonate varieties. These old varieties, which have been so long cast aside as worthless, are, nevertheless, very interesting, as being the parents of the magnificent host of variegated Pelargoniums we see around us.

I am very much inclined to think that it is not by man's agency that our first variegated kinds were obtained. My opinion is, that Nature in the first instance received no assistance from man, but that some of the earliest variegated kinds originated naturally. The first silver-variegated Pelargonium of any note was sent out many years ago by the Messrs. Lee, of Hammersmith, and named by them Lee's Variegated Scarlet; and I think there can be little doubt but that the origin of this variety was a sport from a green parent, which may have been naturally impregnated by the pollen of Pelargonium zonale variegatum. One of the seedlings from this natural cross, although perfectly green for several years, may have had the tendency to variegation, and many years may have elapsed before the plant had sufficiently matured itself to enable it to produce a variegated sport. In support of this view, I may quote a letter I received some months ago from Mr. Davies, and in which he says, "Many years ago I raised a quantity of seedlings from Lee's Flower of the Day. One of them produced a beautiful bright scarlet flower, the flower-truss of which was very large. The original parent, which is now about 18 feet high by 10 feet wide, continued perfectly green till about four years ago, when it occasionally threw out sports, producing variegated leaves on different parts of the plant, which are generally greatly admired." Many instances of a similar nature have come under my own observation. This, I think, will show the possibility of plants retaining variegation in their nature for many years, and only developing it when the plant has grown to a large size, or been subjected to some peculiar treatment.

Whatever may have been the origin of Lee's Variegated Scarlet, it is certain it was the parent of some of our very best silver-margined varieties. From it Mr. Kinghorn raised Flower of the Day, a variety which is still grown very largely, and is not yet surpassed for general usefulness by any at present in cultivation. Flower of the Day was followed by Mountain of Light, and a little later Mrs. Lennox appeared: after this Bijon, Alma, and many others in the same way. Previous to the appearance of these varieties Mr. Kinghorn raised Attraction, which was the first variety ever produced with a pink zone. This was followed by Countess of Warwick, and then the appearance of Mr. Elphinstone's varieties created a sensation. Their names were—Fontainbleau, Hotel de Cluny, St. Cloud, and The Queen's Favourite. In 1833 Mangles' Silver Variegated appeared as a sport on Pelargonium heterogamum in the garden of Captain Mangles at Sunning Hill. This variety has never been of any use for cross-breeding purposes. I have never known it ripen seed but once; that was at Oulton Park during the hot and dry summer of 1865. None of the seed vegetated. The origin of Golden Chain was a sport from P. inquinans, produced about the year 1844, in the neighbourhood of Ipswich. Some years after this Lady Plymouth also sported from P. graveolens. Osborne's Brilliant appeared in 1851; this was also a sport.

There are several claimants to the honour of having raised the first Tricolored Pelargonium. A correspondent stated in The Journal of Horticulture lately, that the first Tricolor was raised in the neighbourhood of Blackheath nearly twenty years ago, and that it was named Rainbow. If this statement is true, it is strange that a variety nearly equal to Mrs. Pollock should have remained unknown so long, and that its fortunate raiser had not a keener eye to business. Mr. Elphinstone, of the Sprowston Nurseries, Norwich, appears to have exhibited the first Tricolor. In a letter which I received from him some months ago, he said, "I raised the first Tricolor Pelargonium, and exhibited it at the Horticultural Society's rooms in Regent Street in the year 1851, and was highly complimented by the late Dr. Lindley." This variety Mr. Elphinstone sold to Mr. Veitch, who could do nothing with it, and eventually lost it. Major Trevor Clarke, I believe, was the first to discover the potency of the pollen of Golden Chain upon other varieties. To Mr. Grieve belongs the honour of having produced the first permanent Tricolor. His name will be handed down to posterity alone, as the originator of this beautiful class of plants. The advent of his Mrs. Pollock in 1861 caused quite a revolution amongst raisers and growers of bedding Pelargoniums. I have no doubt that Mr. Grieve procured Mr. Elphinstone's and Mr. Kinghorn's varieties, and with them was enabled to bring about such wonderful results. I know, from my own experience, that green seedlings from Mr. Elphinstone's varieties were produced in large numbers with very dark and partly variegated zones. The pollen of Golden Chain applied to the flowers of these would produce both Golden and Silver Tricolors. One of these seedlings, raised five years ago from The Queen's Favourite, I used last year as a female parent, because the zone was very dark and beautifully defined, and the plant showed faint signs of variegation on its stem. Its flowers were fertilised with the pollen of one of my Golden Tricolors: it has produced both Golden and Silver Tricolors, and one of the seedlings that remained perfectly green for nine months afterwards threw out both Silver and Golden Tricolors. This plant, also shown in my collection, is a living proof that both Golden and Silver Tricolors can be produced by one plant spontaneously.

I have noticed in many instances seedling plants producing a solitary variegated leaf after they had attained a height of 9 or 12 inches, and that this leaf has had sufficient power to inoculate the whole of the plant. If the variegated leaf is carefully preserved on the plant, and some of the green leaves above it are removed, the effect of inoculation will soon be observed. This will go on spreading and increasing until the whole system of the plant has become inoculated; the plant will then break out into variegation, and if any green leaves appear on the variegated sport they should be immediately removed. This will enable the variegated portions to predominate, and the future character of the plant will remain fixed and permanent, only occasionally, perhaps, showing a green leaf.

Again, small seedling-plants only showing very faint signs of variegation in the cotyledons will ultimately become permanently variegated, although no sign of variegation may be seen on any of the leaves of the plants for nine, twelve, or twenty-four months; afterwards, if such plants be kept, it will be seen on close examination by any one that there are streaks of variegation appearing on the stem near the position of one of the cotyledons. These streaks, if the plant be freely cultivated, will extend very rapidly, and the variegation will increase month after month until the whole system of the plant become thoroughly impregnated; then the plant will begin pushing out variegated shoots from the base upwards. Some-

times I have found the variegated portion extend too rapidly, especially when it begins to develope itself on very young plants or in an early stage of their growth. In this case, I always pinch portions of the variegated foliage away to enable the green leaves of the plant to recruit its strength, and when it is found necessary to check the predominance of the green part, portions of the foliage on this part of the plant are picked off. To such plants as these I give the preference. I have found, after the sports they produce are fixed, that they are propagated much more easily, and grow much more freely, than do the cuttings from plants that are perpetuated from seedlings which have become very much variegated in an early stage of their growth. In these, the constitution of the plant becomes very much crippled by variegation.

A curious instance of sporting is seen in a large plant of the bronze and gold section, named Her Majesty. The female parent of Her Majesty was one of the green seedlings from The Queen's Favourite, which I have before referred to. The plant was two years old when it was used as a pollen parent, and did not exhibit the slightest signs of variegation at the time I selected it for fertilising with the pollen of Beauty of Oulton, on account of its having a very deep zone. Two months ago it threw out a white sport near the position of one of the cotyledons. I took it off, struck it, and it is now to be seen in my collection. Another white sport appeared shortly afterwards; this still remains on the plant, and may be seen by any one who will examine the beautiful specimen named Her Majesty in my collection.

The preceding, I think, abundantly shows the way in which variegation is transmitted from one generation of plants to another; also that although it may not appear in the first, second, or third generation, it may in the fourth or fifth. This, I think, goes far to prove that variegation in plants is a disease.

In a future paper I will describe the results of some experiments I have now in hand. They will, I am sure, prove very interesting. I have inoculated some strong-growing plants with pieces of several kinds of both Golden and Silver Tricolor Pelargoniums. It will be curious to note what will be the result—whether they will be perpetuated singly or not by the plant, and what the effect on its flowers may be, and, above all, how the progeny will be affected.

I think I have stated enough to show that our old variegated Pelargoniums originated from sports, and that from them the numerous varieties now in cultivation have been perpetuated. I will now leave the subject to be dealt with by some of our scientific gentlemen, and hope they may be able to find out the causes of variegation.—J. Wills.

MILDEW ON ROSE TREES.

Though not a "rosarian," I am a lover of Roses, and in spite of deaths from last winter's frost, have considerably more than a thousand plants still flourishing.

The one enemy which I cannot subdue is mildew. It shows itself here and there at this time of year; but the time when it really works mischief is when the flower-buds are forming on the second growths early in August. Some varieties of the Rose are more affected by it than others. Prince Camille de Rohan, for instance, becomes with me so unsightly, and so debilitated by mildew, that I have half resolved to throw it out, although for hardiness in resisting low temperature, and for freedom in blooming, it is surpassed by none of its colour that I know of.

I notice that the Rev. Mr. Radclyffe recommends "vitriol" as an antidote to mildew and funguses in general. I have found the usual remedy, black sulphur, to be of inappreciable effect, and should be glad to try what Mr. Radclyffe recommends; but what is it? Sulphuric acid, sulphate of iron, and sulphate of copper, are respectively known as oil of vitriol, green vitriol, and blue vitriol.—Monticola.

[Either blue vitriol (sulphate of copper), or green vitriol (sulphate of iron), will do. You can purchase either of a druggist, who should pound it fine, and put it up in two-ounce packets. Two ounces are sufficient for a stable-bucketful of water. Before the vitriol is put into the cold water, it should be thoroughly dissolved in hot water, and well stirred when added to the cold water.

I never found any benefit arise from applying to the Rose mildew either yellow or black sulphur out of doors. If you would supply your plants with water, both over the leaves and at the roots in hot weather, you would not be so plagued with mildew. Mildew is called "the daughter of drought," because in such weather the leaves put forth sticky secretions, to which the sporules of the fungus adhere, and in due time take root, and spread with wonderful rapidity. As soon as you see the slightest "haze" on the leaves, or even before you see it, you had better pour the vitriolic lotion over those plants which are more liable (as some are) to fungoid diseases.—W. F. Radclyffe, *Okeford Fitzpaine*.]

THE LEAFING OF THE OAK AND THE ASH INDICATIVE OF THE SUMMER'S WEATHER.

Which comes into leaf first in the year? Is there any truth in the adage that if the Oak break leaf before the Ash it will be a wet summer, and if the latter show leaf before the Oak a dry one? In this neighbourhood the Oak is fully clothed and the Ash bare, and it usually is so—I think always so; but I have been contradicted in this saying by a person who professes to know.—Ashton-under-Lyne.

[The popular opinion in the midland counties is, that if the development of the leaves of the Oak precedes that of the Ash the weather during harvest will be fine; but that the weather will be wet if the Ash-leafing precedes that of the Oak. The rhymed form of the proverb is—

"If the Oak's before the Ash
Then you'll only get a splash;
If the Ash precedes the Oak
Then you may expect a soak."

The leafing of the Oak usually precedes that of the Ash.]

THE PARIS UNIVERSAL EXHIBITION.

I suppose that while very different views will be entertained of the Exhibition generally, there never has been and never can be but one opinion as to the building itself—that it is ugliness exemplified. People have compared it to a gasometer, &c.; but in truth it can be compared to nothing, for you can (unless you choose to mount the lighthouse, or some eminence), only see the exterior arcade. All the inner portion of the building, being lower, is of course hidden from view; and from its circular construction, as has been already oftentimes said, no vista, no lengthened view, can be obtained; while for the same reason the contents are shown off to the least possible advantage; yet withal it is a wonderful place. In the exterior portion, by courtesy called The Park, but really a vast conglomeration of every possible thing, lighthouses, churches, cafés, stables, farmyards, theatres, are brought together, and so completely cover the ground that all idea of a park is done away with. Therefore a contributor to The Journal of Horticulture has no excuse for dwelling on this portion of the undertaking.

Of the *jardin réservé*, however, we have a right to talk, and of this different opinions will also be entertained. It seems to me that the one predominating fault of the whole Exhibition has been that of forgetting the legitimate objects for which such gatherings were instituted, and, by attempting too much, spoiling the whole. What object, I may ask, can a Tunisian café or a Chinese theatre have in view so far as affording instruction and profit? And then in the horticultural department there are incongruities which ought not to have been tolerated, and which give a cocknified aspect to it. What legitimate object in connection with horticulture has a marine aquarium? and yet this grotto, stocked with sea anemones and fish, occupies a central position in the garden, and has been erected at the cost of some 300,000 francs. The mania for aquariums, which prevailed here some years ago, seems now to have seized the French; and in a prominent position on the Boulevards is now to be seen a large shop fitted up in a grotto, where you are invited to enter and see the animals fed at particular times, as the beasts at the Zoological Gardens. In the Jardin d'Acclimatation you find a whole house devoted to the same object; though what end is to be gained by acclimatising Crassicornis and Dianthus, &c., I am unable to say. I suppose it is this that has led to what I look upon as a great blemish. There may be some excuse for admitting Mr. Frank Buckland's salmon-breeding apparatus into the Royal Horticultural Society's gardens at Kensington, but why this grotto should have been admitted to the *jardin réservé* I know not.

We have been always so ready and willing to defer to the French in matters of taste, and to believe them to reign para-

mount there, that I think not a few persons will be surprised at the unmitigated bad taste of their large conservatory; while they will also smile, if they know aught about it, at the attempt at a flower show which it and the other buildings exhibited. The conservatory was half filled with Palms, grouped without any reference to good arrangement or beautiful effect. There was an attempt at grass, which was a miserable failure, while the grouping of the Azaleas was by no means first-rate. I am now alluding to what is called the fourth flower show; and we may well ask, Where is French horticulture? Take away the magnificent specimens sent by our zealous countrymen Messrs. Veitch, and the collections of the Belgian growers, and what would there be left? When I saw the Azaleas they had been some days exhibited, and were manifesting undoubted symptoms of flagging. The plants exhibited by the French and Belgian growers were very small—not equal to some of the third and fourth-rate collections of our International Show, and amongst the varieties exhibited there was nothing either new or of first-rate excellence. Amongst the new plants M. Linden, of Brussels, Messrs. Veitch, of Chelsea, and Mr. Bull, of Chelsea, were the principal exhibitors; and here again the French nurserymen were out of court. Collections of Agaves and Cacti filled some of the smaller houses; while in the grounds were some tolerably pretty beds of various kinds of annuals, plunged in pots and grouped together, mixed with Grasses, the prettiest bed being certainly a bed of Rhodanthe Manglesii surrounded with Collinsia, and that again bordered with Nemophila insignis. My good old friend, M. Margottin, had just planted a bed of standard Roses under canvas, and very pretty they looked, consisting as they did of many of our best kinds of all classes; but the plants were not large—nothing more, in fact, than the good ordinary-sized plants which are obtained from any respectable nurseryman. They had been grown under glass (but not forced), especially for the Exhibition. This reminds me that the Tea Rose sent out by Guillot fils last autumn, and called Madame Margottin, is really lovely. I have just bloomed it, and nothing can be more beautiful than the contrast between the outer delicate yellow petals and the lively peach-coloured centre.

Any one who remembers what the Champ de Mars was—who can call to mind, as I can, days when one has seen 80,000 troops and National Guards defiling before the Emperor, the ground resounding with the trampling of horses, the tread of men, and the roll of the artillery and waggon trains, but must feel astonished at its present aspect; and I hope I am not hypercritical in regarding the horticultural part as too trifling. It is very wonderful to see the petty lakes and the meandering rivulet; but, after all, the whole has rather a tea-garden aspect. Immeasurably superior was Mr. Gibson's grand result last year, even although produced under canvas, and consequently having to combat with the poles and framework, which were very likely to mar the effect, but which were lost sight of in the amazing blaze of beauty to be seen at all sides. I think, however, that we must pretty well come to the conclusion that international flower shows are only such in name. The perishable nature of the objects, the expense of transit, the certain loss of plants, make it almost impossible to expect the productions of foreign growers. But very few appeared at our International Show, and several of those would, I should think, never attempt it again. Messrs. Veitch and Mr. Bull are the sole representatives of English horticulture; and it is manifest that only a firm so wealthy and enterprising as the former could have sent such collections as they have done. I think one conclusion that every horticulturist may safely come to after a visit to the Paris Exhibition and the Paris nurseries is, that whatever the French may know concerning the theory of horticulture, yet in real love of plants and skill in growing them we are immeasurably beyond our neighbours. May I express a hope that some one will keep a sharp look-out on the new Roses, which were to be, I believe, exhibited on June 1st?—at least a letter from Guillot informed me that he and the other Lyons raisers were about to send their blooms up then; and there is one flower especially of his which I saw last year—a new hybrid Tea, of which I thought highly, and of which I should like to hear some well-qualified opinion. Unfortunately, my own visit was so planned this year, that I could not have the opportunity of seeing any of the new Roses. —D., *Deal.*

Viola cornuta.—Too much cannot be said in favour of this, either as a spring or autumn bedding plant. I have positively cartloads of it now in the highest state of perfection, being one perfect mass of flower; indeed, it is blooming so profusely that the flowers form a perfect sheet of bloom. As to the varieties, my opinion is well known to the readers of your Journal. I have just had a visit from Mr. Tillyard, who can bear witness to all I have said in its favour and as to its beauty.—Edward Bennett, *Osberton Hall, Worksop.*

ROYAL HORTICULTURAL SOCIETY'S GREAT SHOW.—June 4th.

This, which commenced on Tuesday last, and will continue open till Saturday, is the largest horticultural exhibition which has taken place since the International Show last year. It is held in the immense tent which the late Captain Fowke designed—that in which Messrs. Waterer & Godfrey's Rhododendrons were exhibited in former years; and though some of the large Ferns and fine-foliaged plants, too tall to place at the sides, obstruct the view of the smaller flowering specimens, still the general effect is very good, especially when the display is viewed from one end of the tent. Lofty tree Ferns, Yuccas, Dracænas, and noble Palms at once catch the eye and prevent that appearance of flatness which the more uniform height of the other plants would give; and the green turf banks on which the various subjects are arranged, afford a delightful relief to the eye from the bright and varied colours of the masses of flowers.

Azaleas are numerously shown, the principal exhibitors being Messrs. Penny, Wilkie, and Carson among amateurs, and Mrs. Glendinning & Sons and Mr. Turner among nurserymen. In the class for nine plants, Mr. Penny, gardener to H. Gibbs, Esq., is first with Brilliant, a very late variety, with an excellent constitution, producing vivid orange scarlet flowers of good shape and substance; Chelsoni, Sir C. Napier, Formosa, and Magnet, all different shades of orange scarlet; Magnificent and Iveryana, white; and Model, rose. Mr. Turner is second with plants mostly between 5 and 7 feet in height, and about 5 feet in diameter. Holfordi, Iveryana, and Gem are those in the best condition.

In the Nurserymen's class for six plants, Mrs. Glendinning & Sons take the first prize with the same plants as shown at the Royal Botanic Society's Show, and Mr. Turner is second with larger plants but not so healthy. In the Amateurs' class for six, Mr. Carson, gardener to W. R. G. Farmer, Esq., Cheam, was awarded a first prize for fine specimens of Apollo, orange scarlet, Symmetry, Stanleyana, Sir C. Napier, Variegata, and Model.

In class 4, fifteen plants in 12-inch pots, the best come from Messrs. Ivery, of Dorking, who have among others Madame Ambroise Verschaffelt, white flushed with salmon, and heavily spotted in the upper petals with deep red, a very fine and showy variety; President Claeys, salmon broadly edged with white, Charles Enke, Etoile de Gand, Gem, very bright in colour, Duchesse Adelaide de Nassau, scarlet blotched with violet crimson in the upper petals, very rich in colour; Leopold I., deep rose; Elegantissima, a fine white, flaked with carmine, but as shown too sportive in character, and Kinghorni, with large rosy lilac flowers. Mr. Turner has the second prize for a very good collection consisting of several of the preceding kinds, Brilliant, and President with large orange salmon flowers.

Roses form a most beautiful feature of the Exhibition; indeed, it is scarcely possible to speak too highly of the beauty of some of the specimen plants. Mr. Turner is first in the class for nine, with a splendid plant of Charles Lawson, and fine examples of Gloire de Dijon, Madame Boll, Général Jacqueminot, Souvenir d'un Ami, Vicomte Vigier, Queen, Juno, and Comtesse de Chabrillant. In the set of the same number from Mr. William Paul, who is second, are fine plants of Juno, Paul Perras, Souvenir d'un Ami, Niphetos, Senateur Vaisse, and Comte de Nanteuil. For six plants Messrs. Paul & Son are first with Charles Lawson, Juno, Souvenir d'un Ami, Celine Forestier, Lord Raglan, and Niphetos, all in excellent bloom. Messrs. Francis, of Hertford, who are second, have good examples of Madame Villermoz and Souvenir d'un Ami. In a miscellaneous collection from Mr. Turner, of Slough, the beautiful Alba Rosea, Souvenir de la Malmaison, and Beauty of Waltham are noticeable.

Of new Roses not sent out previous to 1864-5, there are only two collections, these being from Messrs. Paul & Son and Mr. William Paul, who each receive first prizes. The former have Michel Bonnet, a full rose-coloured flower, Duchesse de Caylus, Pierre Notting, very dark, Madame Victor Verdier, and Princess Mary of Cambridge; while Mr. W. Paul has, among others, Triomphe de la Terre des Roses, very large and full, violet rose; Jean Rosenkrantz, full, crimson; and Dr. Andry.

Pelargoniums are numerously exhibited, and with some exceptions in excellent condition. Mr. Turner, of Slough, has the first prize for nine, showing of light kinds Desdemona, Patroness, and Fairest of the Fair; Golden Hue, Lord Clyde, and Landseer, dark; Spotted Gem, Mdlle. Patti, and Lilacinum. Mr. Fraser is second with Caractacus, Sylph, Festus, Empress Eugénie, Sanspareil, Pericles, Mdlle. Patti, Lilacinum, and Rembrandt. For six, fine plants of Ariel, Rose Celestial, Lilacinum, Lord Clyde, Desdemona, and Leander, from Mr. Fraser, are first; and Mr. Turner is second with, among others, John Hoyle, a showy cloaded scarlet variety, with dark upper petals edged with carmine; Mary Hoyle, a very pretty orange salmon variety with a white centre and a rather small black blotch. Among

Amateurs, the best set of six is furnished by Mr. Nye, gardener to E. B. Foster, Esq., Clewer Manor, who has fine specimens of Mdlle. Patti, Etna, Desdemona, Belle of the Ball, Garibaldi, and Conqueror, which is larger than Lilacinum, but much the same in character. Mr. Ward, gardener to F. G. Wilkins, Esq., is second; Mr. Wiggins, gardener to W. Beck, Esq., third.

The Fancy varieties are always charming, and of these Mr. Fraser, who is first in the Nurserymen's class for six, sends beautiful examples of Ellen Beck, Roi des Fantaisies, Crystal Beauty, Lucy, Undine, and Celestial, the last very fine. Mr. Turner comes second with some of the varieties just named, Acme, and Ann Page. Mr. Bailey, gardener to T. Drake, Esq., Shardeloes, has the first prize in the Amateurs' class for good plants, though not so large as those which he has exhibited in former years. Mr. Weir, gardener to Mrs. Hodgson, Mr. Windsor, and Mr. Donald, Leyton, also exhibit.

A first prize for the best specimen Pelargonium of any kind is taken by Mr. Turner with Delicatum, a Fancy variety, measuring about 3 feet across, and quite a mass of bloom. Mr. Nye has a second prize for Rose Celestial (Show), about 3½ feet across, and admirably bloomed; and Mr. Fraser is equal second with Desdemona.

Mr. Turner also shows a miscellaneous collection of new Pelargoniums, among which The High Admiral, Charles Turner, and William Hoyle are remarkably fine varieties.

In the class for six Zonal Pelargoniums Mr. Fraser is the only exhibitor, taking a first prize for admirably grown and bloomed plants of Madame Werle, white, with a pink centre; Louis Rœseler, salmon scarlet, Rose Rendatler, Emile Lieau, orange salmon; Mousieur Rendatler, white, suffused with salmon; and Clipper, brilliant orange scarlet, very fine. We hope that at future exhibitions there will be several competitors, as it is evident that specimens such as those of Mr. Fraser are capable of adding much to the brilliancy and interest of horticultural gatherings.

Orchids are not so plentiful as they usually are at this season, nor are they so fine as we have seen them, but they comprehend a large number of interesting species. Mr. Penny shows the best collection of twelve; in this we noticed a fine specimen of Cypripedium barbatum, C. Hookeriæ with a dozen blooms, Vandas, Lælia purpurata, Dendrobium macrophyllum giganteum, D. nobile, Aërides Warneri, and Cattleya Warneri. Mr. Wiggins is second with a collection in which there are Saccolabium præmorsum with two fine racemes, Foxbrush and other Aërides, Cypripediums, Cattleyas, &c. In the Nurserymen's class for ten, Messrs. Veitch take the lead with Lælia purpurata, fine; Cattleya lobata, Mossiæ superba, and McMorlandii, the last with conspicuous orange markings in the lip; Cypripedium barbatum, and the bold-looking variety called Veitchii, Saccolabium guttatum, and other species. Mr. Williams, who comes second, has Cattleya citrina with a dozen blooms, Lælia elegans, the fine rosy purple and white Aërides crispum, and Oncidium altissimum. Mr. Bull is third, having among others Cypripedium caudatum with five flowers, several varieties of Cypripedium barbatum, and Cattleya citrina. In the class for six Orchids, Mr. Penny, who is first, has Saccolabium guttatum with five racemes, but short; and of Trichopilia crispa a fine specimen in beautiful bloom. Mr. Fairbairn, who is second, shows Vandas and good examples of other genera. In the Nurserymen's class for six, Messrs. Jackson, of Kingston, and J. & C. Lee, of Hammersmith, stand first and second, and exhibit a good example of Deudrobium densiflorum with orange blossoms, other species of the same genus, Odontoglossum citrosmum, Cattleyas, Lælias, and Vandas. For the best single specimen, Mr. Sherratt, gardener to J. Bateman, Esq., Knypersley, is first with Dendrobium MacCarthiæ; and Mr. Fairbairn second with Phalænopsis grandiflora, which is not, however, remarkable.

Stove and Greenhouse plants in flower are shown in great numbers and are generally fine. The principal exhibitors are Messrs. Lee, Rhodes, and Glendinning, among nurserymen; and of amateurs, Messrs. Wilkie, Carr, gardener to P. L. Hinds, Esq., and Peed. Among the plants shown are excellent specimens of Medinilla magnifica, Rhynchospermum jasminoides, Dracophyllum gracile, Allamandas, Stephanotis floribunda, Ixoras, Clerodendrons, Heaths, Azaleas, Genetyllis tulipifera, &c. The first prize in the class for the best specimen plant was awarded to Mrs. Glendinning & Sons, and the second to Mr. Wilkie, who both have Allamauda Hendersoni with immense blooms. Messrs. Lee are third with Dipladenia crassinoda.

Heaths are very numerously represented, and by fine specimens contributed by Messrs. Rhodes, Peed, Jackson & Son, Ward, and Wilkie; while beautifully bloomed plants in pots not exceeding 5 inches in diameter are shown by Messrs. Jackson and Osborn.

Of other subjects in bloom Mr. Wilkie has a fine standard Rhododendron; there are some Fuchsias, but not remarkable; and herbaceous Calceolarias are shown as usual in fine bloom by Mr. James, gardener to F. Watson, Esq., Isleworth. Mr. Williams contributes a dozen Amaryllises; and Mr. Turner takes a first prize and Mr. Bull a second prize for Lilium auratum, a plant of which from the former has a spike of ten blooms.

Fine-foliaged plants and Ferns are shown in great numbers, and most of the specimens are not only large but in beautiful condition. Pandanuses, Palms, Crotons, Dracænas; Alocasia metallica, Lowii, and macrorhiza variegata; Yuccas, Theophrastas, Gleichenias, Marattia elegans, Dicksonias, Cibotiums, Cyatheas, Alsophilas, and many others, are admirable. The collections sent by Mr. Williams, of Holloway; Mr. Fairbairn, Sion; Mr. Taylor, gardener to J. Yates, Esq.; Mr. Donald, Mr. Carr, Mr. Smith, Mr. Bull, and Messrs. Jackson, of Kingston, are well worthy of particular notice. Of Caladiums, likewise, there are some very fine plants from Mr. Fairbairn. For three Anthuriums, Messrs. Veitch have taken the first prize with A. Scherzerianum with four magnificent scarlet spathes about 5 inches in length, A. cordifolium or magnificum, and A. regale. Mr. Williams is second with the first named and A. magnificum, with its deep green leaves, prominently veined with pale green, measuring 2 feet in length and little less across. The third species is A. acaule with ample green foliage. In the class for the best pair of Yuccas or Beaucarneas, Mr. Williams takes a first prize with two very remarkable specimens of Beaucarnea recurva and B. glauca, Messrs. Veitch being second with fine specimens of the Variegated Aloe-leaved Yucca, and Mr. Bull third. Of Dracænas, Mr. Fairbairn shows a remarkably fine pair, but the species is not stated, and Mr. Williams takes a second prize with two fine examples of D. lineata. Agaves, from Messrs. Williams, Lee, and Bull, comprise some curious as well as pretty kinds. Of Pandanus Veitchii, Messrs. Veitch have a remarkable specimen forming an immense fan; and of tree Ferns, Mr. Williams shows a Dicksonia antarctica not less than 18 feet high, and Messrs. Veitch and Mr. Bull also show very large specimens of the same species. Chamærops humilis, of which Mr. Williams sent a very large specimen, was awarded the prize for the largest and finest Palm.

Of hardy evergreen trees and shrubs, interesting collections are shown by Messrs. Veitch, Bull, and Osborn; and Mr. Salter, of Hammersmith, has a very fine collection of hardy variegated plants, of which he possesses at his nursery a rich and curious collection. Of hardy British Ferns, Messrs. Ivery have a beautifully grown collection in which Athyrium Filix-fœmina Victoriæ, A. F.-f. plumosum, A. F.-f. pulcherrimum, and Polystichum angulare proliferum and plumosum are remarkable for their beauty. Mr. Salter and Mr. Bull also contribute many pretty forms.

Tricolor Pelargoniums are shown by Messrs. E. G. Henderson, Messrs. F. & A. Smith, Mr. Watson, and others, but these varieties have recently received so much attention that they need not here be particularised.

To some other subjects shown we shall have to revert next week; but Mr. Bull's singular Amorphophallus, referred to in the report of the Royal Botanic Society's Show, must be mentioned, as one of the most singular. It is now fully developed. Hottein japonica in group from Messrs. Veitch is also very fine. Mr. Fairbairn shows some fine Selaginellas, of which a panful of S. apoda is most beautiful. Mr. Bartlett, of Hammersmith, has also some fine Hymenophyllums.

Fruit is not one of the objects invited, but Mr. Ward, gardener to T. Miller, Esq., Bishop Stortford, has been awarded an extra prize for Pine Apples. He exhibits one Queen, weighing 5¼ lbs., and a Providence 8 lbs. in weight. Mr. Neale, gardener to R. A. Cartwright, Esq., Banbury, also has an extra prize for a very good Smooth-leaved Cayenne; and similar awards have been made to Mr. Tegg, gardener to the Duke of Newcastle, Clumber, for Brugnon Nectarines; to Mr. Sage, gardener to Earl Brownlow, Ashridge, for Peaches; to Mr. Sherrat, for Elruge Nectarines, and to Mr. Henderson, Cole Orton Hall, for a 14-lb. box of Black Hamburgh Grapes; besides which, he sends a collection of eight varieties. Mr. Fraser sends some very good Strawberries in pots, and to the Fruit Committee on the first day Mr. Rivers, of Sawbridgeworth, sent seven varieties of Cherries from pot trees, which being very fine were awarded a special certificate. Mr. Lydiard, of Batheaston, likewise sent a small collection of vegetables, and Mr. Francis, of Hertford, Hill's June Broccoli, a hardy sulphur-coloured variety.

Intending exhibitors will be glad to learn that they will now have an opportunity of examining the cups and some of the other prizes to be awarded at the Bury Show, these being placed on a table in the centre of the exhibition tent for public inspection.

At the General Meeting of the Society, held on Tuesday, W. Wilson Saunders, Esq., in the chair, twelve new members were elected.

Floral Committee, *June 4th.*—The seedling Show Pelargoniums were the great feature of this meeting. There were many entries for these, and but little novelty among them. Probably the fickle weather we have had of late may have affected them, for in many instances the petals were crumpled and the flowers were deficient in smoothness and outline. Mr. W. Nye, gardener to E. B. Foster, Esq., exhibited several seedlings. First-class certificates were awarded to Rob Roy, Joan of Arc, and The Emperor. This last was considered the flower of the year, it was most superb. Messrs. Downie, Laird, & Laing, sent a collection of Zonal, Nosegay, and other varieties. A fine, broad-petalled, bright rose, intermediate variety, Seraph Zonal, was awarded a first-class certificate. There were many promising varieties, but in this and other instances the plants were too young and small to give any idea of their qualities, and unless the Nosegay section is seen planted out or in a mass, it is generally impossible to come to the merits of the plant. The bedding Pansy, Imperial Blue, sent out by Messrs. Downie & Co., seems to be a useful variety.

Messrs. Backhouse received a first-class certificate for Silene pennsylvanica, a dwarf plant, covered with bright pink flowers, and very useful for rockwork and other decorative purposes. Mr. Hoyle, Reading, exhibited eleven seedling Show Pelargoniums; Example and Victor, had received first-class certificates last month. There ap-

peared too great a similarity among them, and no advance on last year's seedlings. Mr. Turner, Slough, received a second-class certificate for a very pretty Fancy Pelargonium Madame Vilda, a very deep carmine flower with a pure white centre. This plant will improve upon acquaintance and become a favourite. Mr. Wiggins sent nine seedling Show Pelargoniums—Hermit was awarded a first-class certificate, Filomena a second-class certificate. The gardener to J. R. Ramhill, Esq., Walthamstow, sent three promising Zonal Pelargoniums, but the plants were too small to justify any award. Messrs. Ivery received first-class certificates for Polystichum angulare oxyphyllum, Athyrium Filix-fœmina plumosum multifidum, the Axminster variety of A. Filix-fœmina plumosum, and A. Filix-fœmina Girdlestonii. Mr. Watson exhibited again his Nosegay Pelargonium Excelsior, which is not sufficiently distinct from other varieties. Messrs. Salter, Versailles Nursery, were awarded a first-class certificate for a beautiful variegated plant, Coprosma Baueriana variegata. Mr. Robert Veitch, Exeter, sent two magnificent specimens of Adiantum Farleyense and Adiantum species, probably a seedling from the former. Mr. Stone, gardener to J. Day, Esq., exhibited a new and very magnificent variety of Cypripedium Stonei, with much broader petals and stripes in the wings—a decided improvement on C. Stonei. It received a first-class certificate. He also exhibited Cattleya Dawii, a superb plant, which had received a first-class; Epidendrum vitellinum majus; and Oncidium Krameriannm, but which was said to be O. papilio pictum. Messrs. E. G. Henderson sent a large group of interesting plants very prettily arranged, edged with a double row of their Pyrethrum aureum, or Golden Feather. A special certificate was awarded. Mr. D. Ferguson, Whitton, Hounslow, sent a collection of Petunias; Mr. W. Paul, Nosegay Pelargoniums Blue Bell, Crimson Queen, Little Gem, all of which have been noticed before.

Mr. James Clarke, Bury St. Edmunds, sent a very singular seedling Pink, a deep rose colour, fine smooth petals. It came without a name; the Committee named it Clarke's Rose Pink, and awarded it a second-class certificate. It is a very pretty and useful variety. A short history of its origin would be very interesting. Mr. Munn, Brentwood, sent some very pretty seedling Zonal Pelargoniums. First-class certificates were awarded to Mimas, a beautiful light orange scarlet, a fine-formed flower; Rosabel was a distinct colour, but rough, as exhibited on Tuesday. Messrs. F. & A. Smith, Dulwich, exhibited two collections of Zonals, the one with plain foliage, the other consisting of some of their best Versicolors or Tricolors. This collection was not entered for the examination of the Committee, and consequently the various seedlings in it received no award. Among the twenty sent, L'Empereur, Louisa Smith, Impératrice Eugénie, Queen Victoria, Meteor, and Prince of Wales appeared to be plants of great merit, and will please all who may be desirous of purchasing them. Mr. Bull sent Zonal Pelargonium Valiant, Petunia Official, a striped variety, Pyrethrum aureum, and Lobelia Rosy Gem.

Weekly Show, *June* 1*st*.—Prizes were offered for collections of French Pelargoniums (amateurs), Orchids, miscellaneous plants (open), and for the best exhibition of fruit. Mr. A. Wilkie, gardener, Oak Lodge, Addison Road, Kensington, was awarded a second prize for Pelargoniums, and also a first prize for collection of miscellaneous plants; an extra prize was also awarded Mr. Wilkie for a collection of Ferns and Heaths. A third prize was obtained by Mr. W. Bartlett, Shafteshury Road, Hammersmith, for Pelargoniums, and an extra prize for collection of Maiden-hair Ferns. Mr. Bartlett exhibited a collection of miscellaneous plants, and also a collection of hardy Ferns. An extra prize was awarded Mr. Niell, Rivington, Lancashire, for a box of seedling Calceolaria blooms; and Mr. W. Earley, gardener to F. Pryor, Esq., Digswell, Welwyn, Herts, gained an extra prize for a collection of vegetables. From the Society's garden, at Chiswick, an interesting collection was exhibited of Gloxinias, Calceolarias, Petunias, Sedum variegatum, &c.

ACCLIMATISATION OF NEW ZEALAND TREE FERNS.

The hardihood of two or three species of the New Zealand tree Ferns has been rather severely tested at Kilronan, Co. Roscommon, the beautiful residence of Colonel and Lady Louisa Tenison. We say severely tested, for there did not appear to be any special precautions taken in their favour when placed ont of doors. They must have had goodly stems, inasmuch as her ladyship had received them from a friend, direct from New Zealand, some years previously, and it was their having outgrown their house accommodation at Kilronan that suggested the idea, and was the immediate cause of subjecting them to the ordeal. It appears they had done famously, and, as may be imagined, formed charming objects out of doors through the summer, and continued to be such up to Christmas, when they were actually putting forth from their crowns a new growth of their crosier-like fronds, and their pushing at that season formed one of the most serious grounds of apprehension for their safety; for though up to that period "the mildness of the season was in everybody's mouth," a change might suddenly come, and not alone rudely check this unseasonable development of fronds, but do for the plants altogether. Well, a change did come, and with a vengeance, too! A Christmas-eve and a Christmas-day mild and warm almost to oppressiveness; a New Year's-day of bitter cold and snow, the former increasing in intensity until but four days later the mercury on the other side of the Irish Channel fell below zero, and here (Ireland) it was not many degrees above it.

We anxiously, but almost hopelessly, looked for tidings of the tree Ferns at Kilronan. We should have previously mentioned that the kinds subjected to exposure were Cyathea medullaris, a noble Fern, and further remarkable as the one whose pith, formed a staple article of food of the Maori, and C. dealbata the most light and airy, as well as, perhaps, the loftiest, of the New Zealand tree Ferns, its stems often reaching the height of 40 or more feet. In the course of this week Dr. de Ricci placed in our hands a portion of a frond of the latter, received from Lady Louisa Tenison, and which she had just taken from the specimen of C. dealbata that had been exposed to the Siberian rigours of the past winter, and had come through entirely unscathed. It appears, in fact, it was the plant that had not a shadow of protection that is now in such fine condition. The portion of frond lying before us is as fresh-looking as possible, and not even in the least browned or discoloured, and we are informed the young growths above alluded to are coming away quite uninjured. On the other hand, C. medullaris succumbed to the severity, and is gone. That Kilronan this year did not enjoy any special immunity from very severe frosts may be inferred from the fact that its beautiful lake was frozen to the depth of several inches, and traversed as a roadway by the people.—(*Irish Farmer's Gazette.*)

INTERNATIONAL HORTICULTURAL EXHIBITION OF 1866.

It is gratifying to be able to announce the highly satisfactory conclusion to the Great Horticultural Exhibition of 1866. In the correspondence which follows, the arrangements which the Executive Committee have finally made will, we doubt not, meet with the approval of all who are interested in the advancement of horticultural and botanical knowledge, by the establishment of what will henceforth be known as "the Lindley Library." Since the dispersion of the rich library the Royal Horticultural Society formerly possessed, there has been no place where the horticulturist could go for reference to works that are not in everyday use; and from the central position at Sonth Kensington, and the facilities that will be afforded to readers, the Lindley Library must become a great boon to all who would desire to make use of the advantanges it offers.

"Botanic Gardens, Chelsea, April 11, 1867.

"Sir,—I am desired by the Executive Committee of the International Horticultural Exhibition, to forward you the enclosed copy of certain proposals for the disposal of the surplus funds now in its hands, adopted at its last meeting, and through which it is trusted the Society will derive some permanent benefit in acknowledgment of the facilities granted by your Council to the Committee at the time the extension of the Great Show was thonght desirable.

"May I beg that you will lay the proposals before the Council at the earliest opportunity, and that you will as soon as possible acquaint me with its reply? "I am Sir, your obedient servant,

"Thomas Moore.

"To the Secretary of the Royal Horticultural Society."

Extract from Minutes of Executive Committee, Embodying the Proposals above Referred to.

"1, That the surplus funds realised at the International Horticultural Exhibition of 1866, be applied to the establishment of a permanent horticultural and botanical library, to be vested in seven Trustees, as hereinafter mentioned, and to be called The Lindley Library, in memory of the late Dr. Lindley and his zealous devotion to the cause of horticultural and botanical science.

"2, £600 of this surplus to be applied to the purchase of Dr. Lindley's own library. As it appears that the Royal Horticultural Society has already provisionally secured possession of this collection with a view to prevent its dispersion, the Society to surrender it to the Trustees absolutely, in consideration of being repaid the sum of £600 in question.

"3, The Society to consent to the Library now proposed to be formed, being placed in the Council-room during the period of the continuance of their lease under the Royal Commissioners for the Exhibition of 1851.

"4, Of the balance of the fund (about £1200), the Trustees to expend such sum as they may think expedient in the purchase or construction

of bookcases and fittings for the reception of the Lindley Library, and any subsequent extension of it in the Council-room of the Society.

"5, The Library to be available for consultation by Fellows, Members, and Associates of the Royal Horticultural Society, and other persons possessing rights of admission to the premises; also, by gardeners on their producing a satisfactory introduction from their employers, and by young gardeners who may have passed or are preparing for the examinations held by the Royal Horticultural Society and by the Society of Arts. In the case of other persons to whom it may appear desirable to give the privilege of consulting the Library, the Trustees and the Society to agree upon the conditions under which the privilege of admission shall be given.

"6, In the event of the books being kept under lock and key in the bookcases, the Society to entrust the custody of the keys to one of its officers, who shall be prepared at all reasonable times to give access to the books to those persons entitled to consult them.

"7, The remaining balance of the surplus, after providing for the above items of expenditure, and setting aside any sum that may be necessary for contingencies (such as the preparation of the trust deed hereafter referred to, &c.), to be applied by the Trustees to the purchase of further works to be added to the Library.

"8, A trust deed to be prepared for the purpose of giving effect to the present arrangement,—three of the Trustees to be appointed by the International Executive Committee (namely, the three Secretaries of the International Horticultural Exhibition and Botanical Congress, Mr. Thomas Moore, Dr. M. T. Masters, and Dr. R. Hogg), three by the Royal Horticultural Society (namely, the Treasurer and Secretary of the Royal Horticultural Society for the time being, and one other person to be chosen by the Society), and one to be added by the six Trustees above-mentioned jointly.

"9. The Trustees to have the power of removing the whole of the books purchased under the trust, or added to the Library by presentation, together with all the bookcases, fittings, &c., referred to in paragraph 4, in the event of the determination of the lease held by the Society under the Royal Commissioners, and of making such arrangements as they may think fit for establishing the Library elsewhere."

"Royal Horticultural Society, South Kensington,
"April 17, 1867.

"Sir,—The extract from the minutes of the Executive Committee of the International Horticultural Exhibition respecting their surplus, which you were good enough to forward me, was yesterday read to the Council, and I am requested to convey to you their thanks for the very liberal proposition which your Committee has made.

"The Council will, as wished, surrender absolutely the Lindley Library for the sum of £600; and in accordance with the terms of paragraph 8 has elected Mr. W. Wilson Saunders as the third and permanent Trustee from the Council.

"With respect to paragraph 5, the Council would prefer that the admission of strangers should be regulated by the Trustees, and perhaps your Committee will find no difficulty in adding this slight concession to their very handsome present.

"The Council desire me to add that in their opinion no better or more acceptable return could have been made to the Society for the facilities afforded to your Committee by the Council.

"I have the honour to be, Sir, your obedient servant,
"Henry Scott, Secretary.

"To Thos. Moore, Esq., F.L.S., &c.

ROYAL BOTANIC SOCIETY'S SHOW.

May 29th.

A short account of this Exhibition having been given last week, it now only remains for us to notice more particularly the principal subjects which collectively produced one of the most effective displays ever seen at the Regent's Park, but at which, unfortunately, there was not so large an attendance of visitors as usual, owing to the occurrence of a thunderstorm in the forenoon and of frequent heavy showers in the afternoon.

Of stove and greenhouse plants, collections of ten were furnished by Messrs. Baines, Peed, Kemp, and Wheeler, who had prizes in the order in which their names are mentioned. In Mr. Baines's collection several of the plants which he had at the Crystal Palace Show were reproduced in excellent condition, especially his fine Acrophyllum venosum and Genetyllis tulipifera. Mr. Peed's Acrophyllum, though not so large, was in fine condition, showing the rich reddish brown young leaves at the ends of the flower-spikes, as the plant should do when in perfection; his Allamanda grandiflora had much improved, and was a mass of large yellow flowers. In other collections, besides the species already named, were Statice profusa, Leschenaultia biloba, fine examples of Stephanotis floribunda, Azaleas, Heaths, Rhynchospermum jasminoides, Dracophyllum gracile, Eriostemons, Clerodendrons, Aphelexis, Tetratheca verticillata, a magnificent example of Medinilla magnifica (from Mr. Wilkie, Mr. McHenry's gardener), and many other plants which have frequently been noticed at similar exhibitions.

Collections of eight were furnished by Messrs. Donald, Coles, and Wilkie, among amateurs, and by Messrs. Lee, Rhodes, Glendinning, and Williams, among nurserymen, each of whom took prizes in the order in which their names are stated; whilst collections of six came from Mr. Ward, Leyton, and Mr. Smith, Norwood.

Of fine-foliaged plants alone and mixed with flowering specimens effective groups were furnished by Messrs. Lee, Williams, Fairbairn, Baines, Glendinning, Donald, Rhodes, Peed, Kemp, Ward, and Wheeler, and included tree and other Ferns, Palms, Cycads, Rhopalas, Dracænas, Cordyline invidisa, Aloe-leaved Yucca, Beaucarneas, Alocasias, Sarracenia purpurea, variegated New Zealand Flax, Dieffenbachias, &c.

Ferns, too, were represented by fine collections from Messrs. Williams, Taylor, and Baines, comprising many beautiful specimens, among which were Lomaria gibba and cycadiflora, Cyatheas, Cibotiums, Dicksonias, Davallias, Todeas, and Nothochlæna lævis. Messrs. Ivery, of Dorking, had a pretty collection of British Ferns, of which Athyrium Filix-fœmina Girdlestonii, the Axminster variety of A. F.-f. plumosum, and Athyrium angulare oxyphyllum had first-class certificates.

Of Roses there was a very fine display. Mr. Turner, of Slough, whose plants at the Crystal Palace were not quite far enough advanced, had them now in perfection, they being covered with magnificent blooms, and in growth and foliage all that could be desired. The varieties were Anna Alexieff, Charles Lawson, of the largest size, Vicomte Vigier, Maréchal Vaillant, Victor Verdier, Souvenir d'un Ami, Celine Forestier, Baronne Prevost, Général Jacqueminot, and Souvenir de la Malmaison. Mr. William Paul, who was second, closely pressed Mr. Turner with remarkably fine plants of Lælia, Charles Lawson, Juno, Paul Ricaut, Général Jacqueminot, Madame Villermoz, Souvenir d'un Ami, and President. Messrs. Paul and Son, who were third, had fine plants of Madame de St. Joseph, Celine Forestier, and Charles Lawson; and Messrs. Francis, of Hertford, and Mr. Terry, Youngsbury, Ware, had also good groups. Beautiful cut blooms were likewise furnished by Messrs. Paul and Sons.

Orchids, though not so numerous and fine as at the corresponding show last year, comprised, nevertheless, some very fine specimens, the most remarkable of which was the Cypripedium caudatum, noticed last week, and shown in the collection of fifteen from Mr. Wilson, gardener to W. Marshall, Esq., Enfield. This had a dozen very large blossoms, with tails about 2½ feet in length. Odontoglossum Alexandræ from the same exhibitor was also very fine. The second prize was awarded to this collection, the first prize going to Mr. Penny, gardener to H. H. Gibbs, Esq., who had Aërides Warneri, and others of the same genus, a fine specimen of Calanthe veratrifolia, Odontoglossum Phalænopsis, Dendrobium Parishii, Cypripedium lævigatum, Lælia purpurata, Lycaste Skinneri, and other well-known species. Mr. Gedney, gardener to the Rev. W. Ellis, was third. Mr. Peed had a finely-flowered plant of Oncidium sessile, a species which was also shown in good bloom by Mr. Fairbairn, of Sion. For eight plants, Mr. I. Hill, gardener to R. Hanbury, Esq., The Poles, Ware, was first with, among others, good examples of Vanda suavis and tricolor, Calanthe veratrifolia, Chysis Limminghi, Phalænopsis grandiflora, Cattleya Skinneri, and Cypripedium Stonei, the last a fine species, but as yet by no means common. The second prize was taken by Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, who contributed Saccolabium præmorsum, Dendrobium densiflorum, Cypripedium hirsutissimum, and other well-managed plants. Messrs. Veitch received a first prize for a collection of six plants, among which were Cattleya Mossiæ superba and lobata, Cypripedium barbatum, Lælia purpurata, and the Fox-brush Aërides, beautifully flowered. From Mr. Young, Leigh Park, came Phalænopsis Schilleriana, in good condition; and Mr. Williams, Messrs. Lee, and Mr. Bull likewise contributed collections of Orchids.

Azaleas constituted a brilliant feature of the display, but many of the specimens were scarcely so fine as in former years. The first prize for eight was awarded to Mrs. Glendinning & Sons, for well-grown pyramidal plants, well covered with bloom, and displaying here and there green leaves with excellent effect. The sorts were—Gem, Alba lutescens, white striped with red; Madame Miellez, Variegata, Perryana, Extrani, Eulalie, and Iveryana. Mr. Turner was second with plants which, as regards size and beauty, have for these last few seasons been the admiration of all who have seen them, but which, though very effective, were greatly past their best as regards constitution. In the Class for six Azaleas, Mr. Turner was first with magnificent examples of Juliana, Petuniæflora, Holfordi, Sir Charles Napier, Iveryana, and Flower of the Day.

Of Cape Heaths there was a fine display, furnished by Messrs. Rhodes, Peed, Baxendine, Kemp, and Ward. The best came from Mr. Rhodes.

Pelargoniums, as usual, at this Show were very beautiful, being even finer than at the Crystal Palace on the previous Saturday. In the Class for nine plants equal first prizes were awarded to Mr. Turner and Mr. Fraser. The former had fine plants of Lilacinum, Pericles, Spotted Gem, Royal Albert, Patroness, Fair Rosamond, Belle of the Ball, Desdemona, and Lord Clyde; and Mr. Fraser Rose Celestial, Empress Eugénie, and others. In the Amateurs' Class, Mr. Nye, gardener to E. Foster, Esq., had the best collection, in which were Sir Colin Campbell, Desdemona, Patroness, Belle of the Ball, Garibaldi, Etna, Mdlle. Patti, Rose Celestial, and Fair Rosamond. Mr. Ward, Mr. Wiggins, and Mr. Weir, also showed collections in this class. In Fancy kinds Mr. Fraser was first with very fine examples of Lucy, Celestial, Clara Novello, Roi des Fantasies, Arabella Goddard, and Maroon. Mr. Turner, who was second, had Delicatum, Lady Craven, Godfrey Turner, and others, in nearly equally good condition. Mr.

Donald, Mr. Weir, and Mr. James, also showed pretty collections of Fancy kinds.

New Plants were very numerously shown by Messrs. Veitch, Bull, Williams, E. G. Henderson, and others, as may be judged from the fact that some ninety certificates were awarded for them; but they have nearly all been noticed in previous reports. Amorphophallus nobilis, exhibited by Mr. Bull, deserves, however, special mention, on account of its singular-looking flower, which was in course of development, and which formed a fleshy mass about 7 inches in height, and 4 or 5 inches in diameter, and was of a deep chocolate colour becoming paler towards the base. Like most of the genus the flower will probably have a very offensive odour when fully developed. From Mr. Wilson, garden to W. Marshall, Esq., came a pretty variety of Miltonia spectabilis, called rosea, and from J. Gray, Esq., Ashridge Park, a variegated form of Deutzia gracilis.

First-class certificates were awarded for the following new Show Pelargoniums—viz., Man of Mark, Example, and Victor, raised by Mr. Hoyle, of Reading, and exhibited by Mr. Turner; to Hermit and Lady of Quality Improved from Mr. Wiggins; and to Grandee, Rob Roy, and Emperor from Mr. Nye, gardener to E. Foster, Esq., Clewer. Certificates of the same class were also given for Marmion, Pink of Perfection, and East Lynn, three Fancy varieties, shown by Mr. Turner. Of Nosegay varieties Emmeline, from Messrs. Downie, Laird, & Laing, and Dr. Hogg and Waltham Nosegay, from Mr. William Paul, had first-class certificates, and a similar award was made for Lord Derby, a Zonal variety, shown by Mr. Mann, of Brentwood, and noticed at page 373.

Of other subjects, Messrs. Downie, Laird, & Laing had a very good stand of cut Pansies, and good blooms were likewise exhibited by Mr. Hooper, Bath, Mr. Kingston, and Mr. James, of Isleworth, who had also some fine herbaceous Calceolarias. A pretty group of flowering and fine-foliaged plants, edged with the silvery-leaved Meadow Grass and Golden Feverfew, came from Messrs. E. G. Henderson; some beautiful Aucubas and other variegated hardy plants, as well as some very fine standard variegated Pelargoniums, from Mr. W. Paul; Lilium auratum, from Mr. Turner and Mr. Bull; Anæctochilus, from Mrs. Glendinning & Sons; a fine pair of Agave filifera, from Mr. Bull; a large and handsome specimen of Iresine Herbstii, from Mr. Hill, gardener to R. Hanbury, Esq.; a magnificent group of Sarracenias, from Mr. Baines; cut flowers of Ixias and other Cape bulbs, from Messrs. Hooper; and variegated Bamboo and other plants, from Messrs. Barr and Sugden.

ENTOMOLOGICAL SOCIETY'S MEETING.

The May meeting, held on the 6th ult., was presided over by Professor Westwood, V.P. Amongst the donations to the Society's library received since the last meeting were several works of considerable interest—namely, M. Snellen Van Vollenhoven's two volumes on the insects of the Dutch settlements in the Spice Islands, belonging to the families Scutelleridæ (Hemiptera), and Pieridæ (Lepidoptera Diurna); and Mr. Stainton's volume on the Tineina of the Holy Land; and the tenth volume, completing the first series, of his great work on the Tineina of England, a second series of ten volumes being announced. Some valuable works by Dr. J. Leconte on the Coleoptera of the United States of America were also presented by their author. A new part of the Society's "Transactions" was announced as ready for distribution among the members.

Mr. Bates read a communication from Dr. Felder, of Vienna, in which he made some observations on the priority in date of publication of some of the species of Butterflies contained in the volumes of the Novara expedition. He also made some very severe comments on Mr. F. Walker's catalogues of Lepidopterous insects published by the Trustees of the British Museum.

Mr. Stainton exhibited some larva-cases of Coleophora lexella, which has the remarkable habit of feeding when in the young state of the larva on Thymus serpyllum, but at a later period it transfers itself to a species of grass. This species had been forwarded to him by Herr Heinemann, of Brunswick. He also exhibited the larva of Hyponomeuta egregiella first found in the south of Spain, and afterwards at Cannes by Mr. Millière, and at Fontainbleau by Mr. Stainton feeding on Erica cinerea. The specimen was then engaged in spinning its cocoon.

Professor Westwood mentioned that he had recently received some Cimicidæ (Enicocephalus Tasmanicus), from New South Wales, which congregate in the air like Ephemeræ, and emit a pleasant scent like musk, which had communicated itself even to the letter in which the insects had been forwarded.

A communication from Mr. Fereday, corresponding member in New Zealand, was read, mentioning the capture of Cynthia Cardui in that colony. Mr. Bates, however, stated that it was the Australian form of the species, differing permanently from the European one, and likewise that the so-called C. Cardui of South America was a pink variety of C. Huntera.

A letter was read from Mr. C. A. Wilson, corresponding member at Adelaide, in which the writer gave an account of a Centipede having been killed by the excessive heat (114° to 116°), in Cockatoo Valley. He also announced the discovery, on the banks of the Gawler River, of a species of Strepsiptera, by Mrs. Kreusler, being the first instance of that order being detected in Australia. Mr. F. Smith added some further information respecting this parasite, and exhibited specimens of the Wasp Paragta decipiens, in the body of which it is parasitical. It was also stated that Mr. Holiday had noticed the genus Stizus to be infested with these parasites in Italy.

A paper by Mr. H. W. Bates was read, on a collection of Butterflies formed by Thomas Belt, Esq., at the mines of Montes Aureas, in the interior of the province of Maranham, about 160 miles south-east of Para. During three months Mr. Belt had collected not fewer than 364 species of Butterflies, amongst which eight were new to science.

Mr. S. Stevens exhibited some very interesting Carabidæ, collected by Herr Darnell in the district of Cape York, on the north coast of New Holland.

ALKALINE SALTS AS MANURE FOR POTATOES —FEATHER-STEMMED SAVOY.

Last year I intended proving the utility of alkaline salts as manure for Potatoes, but circumstances prevented my carrying out the experiment as I wished. I had about three roods of ground for the purpose, and planted eight varieties of Potatoes, using the salts on each alternate row of all the varieties, so that there could be no difference in the soil. There was scarcely any difference in the appearance of the small-topped sorts, such as Daintree's and Handsworth; but the stronger-growing varieties, such as Fairbairn's Pink Seedling, Ambassador, and King grew remarkably strong in the haulm, the colour being of the darkest green. The tubers of the rather late varieties grew again before being ripe much more than those not treated with the manures referred to. As to flavour, mealiness, &c., I fear the good effects of alkaline salts are all a myth. It is very probable, I think, that alkalies may be advantageously used in growing early varieties; but as regards the general crop of Potatoes, they do not return a tithe of the expense. This is not my first acquaintance with saltpetre, &c., as manure.

My limited experience leads to the following conclusions:—Alkaline salts are good for Trefoils and Grasses generally; in fact, wherever foliage is the main object of the cultivator. With cereals they grow large crops of straw at the expense of the grain. I shall at some time try their effects as hurrying manures for early crops, and when I can state the results with scientific accuracy I will send you an account.

I also wish to call the attention of your readers to a vegetable which is not grown so extensively as it deserves to be; I refer to the Feather-stemmed Savoy. It has a rather coarse appearance during the autumn and early winter months, but after the heads have been cut the stems continue to throw an abundance of sprouts, which when cooked are exceedingly tender and well-flavoured. It is so hardy that the severe weather last winter had very little effect upon it, although Kale, Brussels Sprouts, and Roseberry Sprouts were very much destroyed.—F. Flitton.

ORCHARD-HOUSE MANAGEMENT.

In reply to the request of "Subscriber," page 347, I must first say that I merely threw out the hint respecting orchard-houses for the Editors of the Journal to take up, not at all expecting my letter to be published in full. I feel quite unable to advise others, being myself only a learner; but as far as I can I will offer such explanations as "Subscriber" asks for.

I have roughly measured my ground, and find that I have in lawn 1400 yards, in kitchen garden and frame ground about one acre, and the remainder in carriage-drive and shrubbery. I turn out this year seven hundred pots of flowers. I work ten lights of frames. I have an orchard-house 42 feet long by 14 feet wide, a vinery 12 feet by 9, a Fig-house 12 feet by 9, a Cucumber-house 18 feet by 6, and a Mushroom-house 18 feet by 5.

I think that in gardens of ordinary size like mine, where no skilled gardener is kept, much labour may be saved by carefully attending to a few points like these.

First, let the master who intends to help in any way really do the work he attempts. I never call a man from his work to bring me this or that. I take the tools, ladder, &c., which I may want, and thus my help is really of service.

Secondly, I always have help when it is really wanted, and thus the work is done at the proper time. In hot weather, for example, I have every weed cut down: an extra man is worth much then, and will save labour for weeks afterwards.

Thirdly, I save labour by having plenty of room for putting things into their right place. For example, I have room in my frame ground for the manure to lie ready for the beds. I

have often seen three men at work at a hotbed, two filling and wheeling from the heap 20 or 30 yards off, and one making the bed. My plan is to have the manure drawn to the garden door, have it wheeled in and shaken up on a day when no other work presses, and then when the hotbed is to be made it requires one man only, and he will do it in a very short time. I also have pits 2 feet deep for my beds. This saves much time in measuring the ground and in making up the bed; and much less skill is requisite, as anybody can raise a bed 2 feet high, which is quite sufficient above the ground line.

Fourthly, I have all work done in winter that can be done. The whole garden is dug and manured in winter, and thus the cropping is far less laborious. I have seen crops of Peas ready to stick, when the man has had to take a horse and cart to bring the sticks, and then to spend a day in cutting and sharpening them, and then to carry them to the Peas. I have such work done in the winter, and the sticks stacked close to the ground intended for Peas.

These are just examples of the many trifles in which I think labour in small gardens may be well or ill applied.

My own help is not great, as I have much work on my hands. I am a country clergyman with a wide parish and a large school, and my time is, of course, very much taken up; but I manage every morning to go round my garden and give directions for the day's work, and in the evening I can often do a little nailing or pruning.

I have omitted to state that I think it great economy to have plenty of tools, water-pots, wheelbarrows, and every working requisite.

If "Subscriber" really thinks of putting up an orchard-house, and would like to see mine, I hope he will let me know his nearest railway station; and if within distance of me I hope he will come for the day, when he shall know all my secrets if I have any to communicate. Most probably he is already far in advance of me in gardening knowledge.

I would just add, that while I of course look up to Mr. Rivers as the father of the orchard-house system, and doubt not that in his soil and climate his rules are perfect, I think they require considerable modification in other soils and climates. I cultivate my trees with considerably less trouble than his rules advise. This is my fourth year, and I have departed more and more from his rules each year with manifest advantage, and this year I am perfectly satisfied. I do not see many orchard-houses to compare them with my own, but I cannot imagine one nearer perfection. I have forty-nine trees in it, of which one is blank, three have small crops, and the remainder are really pictures—full of fine fruit now, numbers of them 3 inches in circumference—not a vestige of insect or curl, except here and there a little scale, which springs into being after the tree seemed quite free—in a single day apparently; but you may look a good while before you find one of these.

I ought to add that I have 100 yards in length of wall, covered with fruit trees, varying in height from 7 to 12 feet. —C P.

POOLEY'S TOBACCO POWDER.

In my article on this insect-killer in your last number I find it stated that this powder should be applied before the dew was "on" the leaves and insects; it should be before the dew is "off," since it is the dew, impregnated with tobacco dust, which kills the insects. Since I last wrote on this subject I have tried various other experiments with the powder, all of which were most satisfactory. Another person, to whom I gave some of the powder, used it on a Honeysuckle completely covered with aphides. On my inspecting it the day afterwards I found all the insects dead.—Observer.

[We have inserted this and the preceding communication having faith in an old subscriber who is known to us; but we are not surprised at having a letter, from which the following is an extract:—

"What are we to infer from the statement of "Observer" at page 377? Can it be that the boon so long sought by the gardening public—the remission of duty on tobacco for horticultural purposes, has been actually granted by the Government? It seems to me that you should at once either confirm this assertion, that "the Board of Customs has remitted the duty on ground tobacco," or repudiate it, or, at least, explain how much of this irresponsible statement is really valuable to us. If it is dependable, under what forms is untaxed tobacco allowable, and how is it to be procured? Who is Pooley? and where is his preparation to be obtained? and at what price? —P. H. G."]

FLOWERS BLOOMING DURING MAY—CAMASSIA ESCULENTA CULTURE.

I would say a word in praise of one flower during May, which is not so well known as it ought to be—viz., *Camassia esculenta*. As a pot plant in early spring it deserves a place in all cool greenhouses. It is a bulbous plant of easy culture, thriving in a compost of fibrous sandy loam and leaf mould, with thorough drainage. After flowering it should be carefully attended to until the leaves are matured; then it may be stored in the pots in any cold dry place until the autumn, when it may again be potted. It should then be placed in a cold pit where it can be kept from the frost during winter. Six or eight bulbs placed in an eight-inch pot when in bloom form a very desirable object. Treated as above and planted out in the border or spring garden in a sheltered situation, it will repay any little care that may be bestowed upon it. In appearance it is almost like one of the Ornithogalums; its flowers are of a lovely blue colour, and the plant is about 15 inches in height. A few bulbs planted together in patches, or massed, have a beautiful effect, especially in spring gardens and among herbaceous plants.—M. H., *Acklam Hall, Middlesborough-on-Tees.*

May	3rd.	Purple Orchis	
	"	Mahaleb Cherry	
	"	Aubrietia Campbelli	
	"	Uvularia amplexicaulis	
	"	Epimedium rubrum	
May	6th.	Pæonias of various kinds	
	"	Euphorbia cyparissius	
	"	Corydalis lutea	
May	9th.	Camassia esculenta	
	"	Laburnum	
	"	Common Broom	
	"	Pyrus malus (Apples.)	
	"	Cerasus padus	
	"	Daphne laureola	
May	11th.	Aucuba japonica	
	"	Deutzia gracilis	
	"	Azalea pontica, vars.	
	"	Asphodelus luteus	
	"	Hyacinthus non-scriptus	
	"	Malcolmia maritima	
May	13th.	Lily of the Valley	
May	13th.	Mountain Ash	
	"	Honeysuckle	
	"	Solomon's Seal	
	"	London Pride	
	"	Lilacs of various kinds	
	"	Dble.-blossomed Cherry	
	"	Narcissus biflorus	
	"	Narcissus poeticus	
May	16th.	Horse-Chestnut	
	"	Yellow Ribes	
	"	Viburnum opulus sterile	
May	18th.	Mimulus cupreus	
	"	Auchusa sempervirens	
May	20th.	Saxifraga hypnoides	
	"	Trollius europæus	
	"	Limnanthes Douglasii	
May	22nd.	Polemonium cæruleum	
	"	Coronilla emerus	
May	25th.	Quince	
May	28th.	Rhodiola rosea	
	"	Rhododendrons, various	

EARTHING-UP POTATOES.

I am in doubt whether to earth Potatoes or no. I find it stated in the "Garden Manual" that earthing-up diminishes the crop one-fourth; while, on the other hand, I find the universal custom in this neighbourhood is to earth them up. What is the object of earthing-up? and in cases where it is not intended to do so, is it necessary to plant deeper? If the object be to produce tubers instead of leaves I should have thought that the operation should have been performed much earlier than it is usually done.

Is liquid manure of any use to Potatoes, or is it likely to be detrimental?—Tyro.

[We never earth-up Potatoes. We plant the sets uniformly 6 inches deep, hoe frequently to keep down weeds, and draw the earth over any tubers which may have formed exceptionally near the surface. Our experiments convinced us that earthing-up diminishes the produce and retards the ripening of the tubers.

No liquid manure should be applied to Potatoes.]

GOOD CROPS OF STRAWBERRIES.

In April or May, 1865, I obtained some Strawberry plants from Mr. Rivers; I did not allow them to bear any fruit that year, but last year (1866), they bore what I consider a beautiful crop; but as I am only an amateur grower, you will correct me if my idea of a good crop falls short of what it might be. The whole of the plants were laden with berries, but it was not until the third time the fruit was gathered that I took particular notice of the quantity, when I selected a fine-looking plant, and took from it at that gathering sixty-one fine large berries; they filled a dessert-dish full. At the next, or fourth, gathering I had twenty berries, and at the fifth thirty. How many were gathered at the first and second gatherings I cannot say. The Strawberry was called President by Mr. Rivers;

the fruit is finer than that of Sir Charles Napier on the whole, and as good in flavour. The plants are very promising this year again, and on some of them I could count from four to five hundred blossoms.

I may take this opportunity of stating that La Constante Strawberry, thirty plants of which were kindly sent to me by M. De Jonghe, of Brussels, have turned out remarkably well, the fruit is fine and handsome, and, without doubt, by far the most delicious-flavoured I ever tasted.—J. H.

[Our correspondent lives in a climate and on a soil in the Isle of Wight that are most favourable for Strawberries.—Eds.]

NOTES AND GLEANINGS.

Those who are interested in the trials of the various sorts of early Peas will have an opportunity of comparing them at Chiswick during the next ten days or a fortnight, and of judging the relative merit as to earliness of the competing sorts—Dillistone's Early, Carter's First Crop, Sutton's Ringleader, and Veitch's Early. All of these bloomed on the same day, slatted on the same day, and are at present to all appearance "as like as two Peas." Dickson's First and Best is about two days later in blooming.

—— The Strawberry May Queen was gathered at Chiswick on the 3rd of June.

—— The following Floral and Horticultural Societies have announced their intention to hold exhibitions and meetings during the present month:—

June,	4th to 8th	Royal Horticultural.
„	7th to 15th	Manchester.
„	11th	Halifax.
„	„	West London Rose Show (Ealing).
„	„	Wolverhampton.
„	13th, 14th	Leeds.
„	19th	Royal Botanic of London.
„	„	Royal Jersey.
„	19th, 20th	York Grand Floral and Horticultural Fête.
„	25th	Bristol and Clifton.
„	„	Fermoy (Ireland).
„	„	Royal Oxfordshire.
„	26th	Maidstone.
„	„	Nottingham.
„	„	Wrexham.

We shall be glad to insert the dates of the Shows of any other Societies.

WORK FOR THE WEEK.

KITCHEN GARDEN.

The late frosts have so injured and in many cases destroyed Dwarf Kidney Beans, Scarlet Runners, Lettuces, &c., that it is advisable to have recourse to any means of hastening germination, an object which is best attained by soaking the seeds. A fortnight may in general be recovered by having recourse to the steeping process. There is sometimes sufficient moisture in the ground for the first stages of germination, yet by the time that is accomplished, and before the tender radicle has extended itself beyond the reach of such vicissitudes, the drought has overtaken it, and total desiccation is the result. If the seed is on the eve of germination previous to its insertion in the soil, and if the soil is newly dug, the young plant will in general establish itself in safety. The plan which I would recommend is to steep the seeds in water at a temperature of about 80°, for about six hours or more, according to the character of the seed, and to place the vessel where it will maintain that temperature; then to strain off the water and remove the vessel to a more moderate temperature, say 65°, until the first signs of sprouting, when the ground should be instantly prepared and the seeds sown. *Broccoli*, the Cape, although a small Broccoli, is one of the most useful kinds in the kitchen garden when a constant succession is required. This is a good time to make a very full sowing to supply the table through October and November. *Cauliflowers* sown now will head in November, and may then be housed in cellars, sheds, or outhouses, and continue in use until past Christmas. It is a good plan to sow some Cape Broccoli in drills, prepared after the manner of a Celery trench; the seed to be dropped in patches about a foot apart, and the seedlings to be afterwards thinned out to about three in a patch. Sow a little more of Knight's Protecting, and a sprinkling of some very late spring Broccoli; it may serve to prolong the succession next April and May. *Celery*, every attention should be paid to the plants; they must have abundance of water in every stage. Those pricked out from the seed-bed should have well-prepared beds, the surface of which, for 2 inches deep, should consist of well-rotted manure, soaked with water, and rolled and pressed level previous to pricking out the plants. If the weather prove sunny they should be shaded with boughs.

FRUIT GARDEN.

Proceed with thinning out the superabundant shoots of wall trees, and nail those which it is necessary to lay in. By frequently going over these trees confusion is prevented, and on the whole a saving of time will be the result. The fruit must be well thinned, otherwise it cannot be fine—this applies to the fruit of Pear trees, as well as to stone fruit—taking care to leave those that may now be seen to take the lead in swelling. The shoots of Pears should not yet be cut back, otherwise the buds that ought to remain as such to form fruit-spurs will be induced to break into shoots. They ought, however, to have as much light as possible, and, therefore, the more advanced of the foreright shoots should be stopped by merely cutting off an inch or two from their points. It is now a good time to scrub the stems of fruit trees infested with scale, for the young insects are issuing from their fastnesses, and are as naked and tender as mites. Apple and Pear trees are about this time subject to the ravages of the caterpillars of the lackey moth (Clisiocampa Neustria). They are easily destroyed whilst they remain in groups, and this they do till after their third moulting, they then dissolve partnership, their united efforts in the formation of a web being no longer necessary, and dispersing over the tree in all directions their capture becomes almost impossible. Vines on walls or buildings must be attended to, as to disbudding, stopping, &c.

FLOWER GARDEN.

The Banksian Rose under glass is now going out of bloom, and should be pruned at once quite close to the old wood, in order to ensure a good bloom next year, carefully leaving all the strong young wood of this year that is well placed. Plants out of doors must not, however, be cut until the blossoms make their appearance, when all weak wood should be removed. Early-planted beds in the flower garden would be much improved by hoeing them slightly to loosen the surface after the heavy showers of rain, but do not rake them for a few days. Thin out annuals, and transplant choice kinds. Mow lawns regularly during this growing weather. Clip edgings, and endeavour to render the whole neat in appearance. When the soil is poor and the lawn looks badly, a thin dressing of nitrate of soda will have an astonishing effect; apply it in moist weather. Plant out in borders Salvias, Scarlet and other Pelargoniums, Fuchsias, or any of the other surplus plants after the beds are filled up, taking care not to crowd too much. Hardy American shrubs, such as Azaleas and Rhododendrons, on high-dressed lawns, should at this period have thorough waterings in very dry weather. Carnations must be strictly attended to; a top-dressing of rich compost will be found highly advantageous; take care that the ligatures are not too tight on the stems, otherwise they are apt to become distorted. Pinks will be blooming, tie some waxed threads round the buds to prevent their bursting. Pansies may be struck under hand-lights on a shady border; let the cuttings be put in as thinly as possible. Polyanthuses are extremely apt to suffer from the attacks of red spider; during dry weather shade is absolutely necessary for their successful cultivation.

GREENHOUSE AND CONSERVATORY.

Continue to clear away exhausted flowers in the conservatory in order to give place to fine specimens of Fuchsias, Pelargoniums, Calceolarias, Roses, or other gay and popular flowers. See that Fuchsias have abundant watering. All fires should now be entirely dispensed with, and a light screen of some sort kept at hand to ward off intense sunshine. Shade the blooms of Pelargoniums as they expand, and lower the temperature as far as practicable to prolong their beauty. Those desirous of obtaining new varieties with greater certainty, should protect them with canvas from bees and other insects which are likely to intermix the kinds. Much care is requisite in this respect, for even at best the hopes of the most assiduous are frustrated. Supply them generously with water, and occasionally with liquid manure.

STOVE.

Continue to shift young and growing stock, and to remove early-grown plants for autumn or winter flowering to the cool shelves of the greenhouse, in order to harden their wood and prepare them for early excitement. Much of the success in obtaining winter flowers depends upon this. Stanhopeas will now be blooming; the baskets should be well examined, or fine buds will be lost through contact with the sides. Let the

house have a thorough circulation of fresh air early in the morning, and if the atmosphere is warm give air most abundantly. If the fire is put out betimes the air may be somewhat reduced by eleven o'clock. Some of the free-growing kinds will be benefited by increased pot room, and those on blocks of wood and in wire baskets may have a little additional moss applied over the roots. When vigorous growth is going on never allow the young and succulent roots to perish for want of moisture, which at this season they are apt to do. Gradually expose plants coming into flower to a colder temperature if you desire to enjoy them for any length of time.

FORCING-PIT.

This pit may be profitably filled with numerous ornamental plants requiring the aid of additional warmth to bring them kindly into bloom. Among these may be classed Balsams, Cockscombs, Hydrangeas, Gardenias, &c. The propagation of Pelargoniums may also be carried on at the same time in this pit, as well as that of many kinds of softwooded plants.

PITS AND FRAMES.

Shift specimen plants as often as they require it, shade a little during the middle of the day if the sun is hot, and attend carefully to watering, giving manure water to such plants as have filled the pots with roots, but not too frequently. Do not use it too strong, and let it be as clear as possible; many plants are destroyed by a too-frequent application of manure water. Let the young stock be brought forward in small pots forthwith. Achimenes, for late flowering, may be brought on in a cold pit. Of the young stock of New Holland plants, and Heaths, Epacrises, and Cytisus, many will do best here, the pots being plunged in sand or coal ashes to keep them cool and damp.

RESERVE GARDEN.

Double Wallflowers, Mule Pinks, and some common Dianthuses, Alyssums, Phloxes, Iberises, and many kinds of dwarf Cistuses and Helianthemums may be propagated under handglasses in a shaded situation, and will be found very useful next spring.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

NEVER was there better weather for keeping the Dutch hoe going wherever it could find access, so as to knock up all weeds before they were an inch in height, and to keep a loose surface with the view of preventing heat and dryness from penetrating, and in stiff soils preventing cracking. A press of other work alone prevented us from so treating every piece of ground where the hoe could be used. For such purposes the draw-hoe is altogether out of date, and one drawback to its use is that you tread on the ground after hoeing, and to this may be added that the ground is left more in ridges, whilst the Dutch hoe, well managed, leaves a level surface and little or no trace of its working. Where weeds are only peeping through the ground the Dutch hoe goes over much more ground in the same time.

The work has chiefly been of a routine character. Being a little short of common vegetables, we have used what have been considered a great delicacy, and what in most cases find their way to the rubbish-heap—Sea-kale flower-heads, even at the risk of scarcely having enough of heads to produce seed, but which in general is easily obtained from the seed merchants. These flowering heads make an agreeable change at the hall table, or, indeed, any table with Spinach, Cabbages, or Sprouts. We consider they are best just when the bloom begins to open, and we advise those to try them who have never done so, boiling them like other Greens, with just a little carbonate of soda in the water.

Turnips.—This has been a bad season for Turnips. Whatever preventive one might adopt, the fly would be almost certain to do much damage. The farmers will mostly have the advantage this year, against their will, owing to the weather and the recent rains, especially in stiff land, of sowing late, which, owing to the greater heat in the soil, will cause the Turnips to come more quickly and stronger, and so far present a better opposition to the fly; at any rate late crops are little meddled with in comparison with early ones. Our first-sown crops in the open air are a little irregular, and this failure in the early part of the season first led us to transplant the early Turnips when the rough leaves were well formed. From our earliest Turnips, sown under the protection of glass, we thinned out as many as planted regularly a piece of a sloping bank, and hardly one has failed; they will come in before the first sowings out of doors, and with the exception of twice sprinkling with water gave no trouble, as they were too strong for the fly to nibble at. We have two patches under handlights which we will transplant if the weather should be dull, though we perceive that the last sowing, fully exposed, is as yet untouched. Of course we dust with almost everything in the way of ashes, soot, and lime to keep off the fly, but we never met with anything so effectual as Spruce branches. For many years we never were troubled with the fly, for then we used to have a lot of old fence hurdles, through which we drew branches of Spruce in winter, and most of the needle-like foliage had fallen before we wanted them for seeds. On sowing Turnips, the hurdles were placed on the ground. When the seedlings were up the hurdles were raised on six-inch pots, and ere long on larger ones, and were removed as the plants became strong. Whether owing to the scent of the Spruce, or something else, the fact remains that under such treatment the Turnips were scarcely ever touched by the fly, a fact that may be of importance to the possessors of small gardens, who thus might easily protect a small piece of Turnips. We have of late been unable to lay our hands on Spruce branches, and therefore for regular early crops we have partly resorted to transplanting. For field culture, nothing is so good a preventive of the fly as fine tillage and a forcing manure, which help to make a strong plant quickly. Even then, however, frequent sowings at times will be necessary. Notwithstanding all attempts at dusting, rolling to crush and to destroy the fly, other enemies sometimes appear. One of the best farmers of the day lately told us that on high-priced land he had a large field of Turnips that came up beautifully, but which would have soon been a desert from an invasion of black snails. He turned out all his own ducks, and all the young ducks he could beg or buy in the neighbourhood, shut them up when full, and turned them out again when hungry to help him whilst they helped themselves; and he thus saved his Turnips. A few young ducks are very useful in a garden.

Cabbage Tribe.—Our seed-beds have suffered much, the young plants dwindling away less from fly than the heavy rains, hail, and frosts, and, therefore, we shall sow over again, and that no time may be lost, we will use a mat, a cloth, or even a sash for covering them, until fairly up. It is well to make sure, even by a late sowing, and then though, as in our own case, we hope there will be pretty well enough left, still it is best at the expense of a few seeds to be sure.

Scotch Cabbaging Kale.—Of all last season's planting this is now almost the only thing from which gatherings can be obtained, and that only from a free cutting-down of the flower-stems as they appeared. The young shoots that come from the base are very tender and sweet, and will still do to make a change for a week or two. Of most of the new Greens and Brussels Sprouts we cannot say they are more useful than the older kinds.

Sowed successions of Peas, digging the ground well and enriching it moderately. After this sowing future sowings will be more for the sake of having Peas late than for the profitable returns they will render. What is sown after the day begins to shorten does not do so well as that which has the lengthening day to help it.

FRUIT DEPARTMENT.

Much the same as last week: thinning, tying, regulating, pinching, and above all watering. The Peas in the orchard-houses almost hid the stems and leaves with the profusion of pods.

A correspondent writes to say he is surprised that we did not mention cocoa-nut refuse as one of the best substances to lay along rows of *Strawberries* to keep the fruit clean. We have no doubt whatever that it is excellent; but, cheap as it is, where severe economy is practised it could hardly be recommended for use in a wholesale way, either for this purpose or the covering of flower-beds as a mulching when the ground had been rendered hot enough by the rays of the sun, though for small neat places it would do admirably for both purposes, and if carefully taken off might be repeatedly used season after season before it became decomposed. The refuse from flax mills also answers well for such a purpose. Another correspondent is surprised we did not allude to tiles and slates placed between the rows, were it for nothing but their forwarding properties in fully-exposed places. In thanking both correspondents, we would just remind them that the most easily obtainable materials, so as to be most generally useful, must form a main point in these cursory observations. For our own part we have found tiles and slates placed between the rows

forward the crop in sunny weather about a week; in dull weather they would not forward it at all. The drawback was, that in very bright weather some of the fruit would be scorched; but this was done to such a trifling extent as would prevent us finding serious fault with any one that proposed using them. With strong vigorous rows in the garden of an amateur, who can obtain no litter, &c., we do not think that any mode could be more economical than a few small sticks connected with a ball of small cord. Sixpennyworth of cord will go over a long space.

ORNAMENTAL DEPARTMENT.

We have concentrated the chief part of our strength here. We are hurrying on late subjects or those which suffered slightly, as Perilla, Amaranthus, and Iresine, as we find that young plants of these grown to some size, and planted out after the ground is warm, always do best. We have planted Amaranthus melancholicus in the end of May, and it dwindled every day, and from the same sowings we have planted-out small plants in the middle and the third week of June, that became better and better until the frosts of autumn came. We mean to try the Coleus, especially the brown one, again, but to plant a fortnight or three weeks hence, when the ground has become warmer. The worst of using such plants in a composition group is, that the arrangement is not complete at once, but we had better submit to this than turn out tender plants too early.

Amid the press of matters needing attention, we must just for the sake of the less experienced select a few, little in themselves, but of importance in securing ultimate success—much more important than turning the plants out so early as to astonish your quieter neighbours, and most likely in such a season as this has been to astonish yourself, by having much of your work to do over again. As a fact, we may also mention, that we have seen good plants turned out into beds in the end of April, and plants no better turned out in the end of May and the beginning of June, but from the end of July and onwards the late-planted ones had all the running as they liked to take it. As more important, then, than early planting, we would say—

1st, Be particular that the ground should be well pulverised, aired, and several times slightly turned over, especially after a hot day—in fact, act as if success depended in digging down sunbeams.

2nd, Be particular that all plants in pots or otherwise should be well watered before transplanting—that is, as many hours before as will permit of all excess passing away, so that, especially if pricked out in a bed previously, the weight of the soil will not cause it to fall from the irregular ball. Plants with a ball of any kind, if planted with the ball in a dry state, will scarcely be made wet by any amount of watering afterwards. In extreme cases of dry balls, it may be necessary to soak the ball in a pail before planting. As respects very tender plants, use water heated to 75° or 80°.

3rd, In planting, press the earth to the sides of the ball gently, do not press the ball much downwards, whether there be earth above it or not. Many practical men are in the habit of doing this, and thus crack and break the ball, and strain or destroy the roots, though to keep both entire much consideration had been given.

4th, In planting from pots, if the ball is at all matted with roots, gently disentangle the outside roots, by drawing the points of the fingers along the ball, and then firm the soil at the sides as stated above.

5th, In watering, use only as much as will settle the earth moistened about the roots, and not deluge the surrounding ground. In dry, sunny weather, give this watering before the earth is all replaced, so that you may put dry soil over the moist soil close to the roots. Bear in mind, that evaporation of moisture from any body cools the substance from which the vapour comes, and the damper the soil and the warmer the weather, the greater the evaporation.

6th, Keep the same principle in view in future waterings. Give the plants no more than they will do with without flagging. In bright days, if the leaves look distressed, whilst the roots are moist enough, shade, or syringe overhead, instead of deluging the roots. As to the time for future watering, for six weeks hence it will be best to water in the early part of the day, so as to have the surface soil partly dried before night. When the nights are warmer it is best to water towards evening, and then the plant, uninfluenced by rapid perspiration in the sun's rays, will have more time to absorb the moisture. Remember that the less water tender bedding plants have when first turned out, the less will the soil be cooled at night.

7th, Let all plants, especially in exposed places, be secured. For this purpose we know nothing better than small branching twigs, such as the points of Pea sticks. Spruce branches that have lain a twelvemonth in a heap, with a weight over them, as a haystack or cornstack, are the very best for such a purpose; they are full of little twigs, and if taken care of they will last a number of years. When plants grow intertwined among such twigs these become all covered, and the strongest winds will scarcely be able to throw them into unseemly wreaths or heaps. In low protected places, such trouble may be avoided, but we dare not trust a single Calceolaria, or Scarlet Pelargonium without such securing twigs.—R. F.

COVENT GARDEN MARKET.—June 5.

Supply continues fully equal to the demand; but prices are but little affected. New Potatoes bring from 3*d*. to 4*d*. per lb.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ..... ½ sieve	3	0	to 4	0	Melons ..... each	8	0	to 12	0
Apricots ..... doz	4	0	0	0	Nectarines ..... dnz.	15	0	24	0
Cherries ..... box	2	0	3	0	Oranges 100	5	0	10	0
Chestnuts ..... bush.	0	0	0	0	Peaches ..... doz.	21	0	42	0
Currants ..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	0	0	0	0
Black ..... do.	0	0	0	0	kitchen ..... doz.	0	0	0	0
Figs ..... doz.	10	0	15	0	Pine Apples ..... lb.	5	0	8	0
Filberts ..... lb.	0	0	0	0	Plums ..... ½ sieve	0	0	0	0
Cobs ..... lb.	0	9	1	6	Quinces ..... doz.	0	0	0	0
Gooseberries .. quart	0	4	0	6	Raspberries ..... lb.	0	0	0	0
Grapes, Hothouse .. lb.	5	0	10	0	Strawberries ..... oz.	0	6	1	0
Lemons 100	5	0	10	0	Walnuts ..... bush.	10	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... each	0	6	to 0	8	Leeks ..... bunch	0	3	to 0	4
Asparagus .... bundle	4	0	7	0	Lettuce .... per score	1	0	2	0
Beans, Kidney, per 100	1	0	2	0	Mushrooms .... pottle	1	6	2	0
Scarlet Run. ½ sieve	0	0	0	0	Mustd. & Cress, punnet	0	2	0	0
Beet, Red ..... doz.	2	0	3	0	Onions .... per bushel	4	0	5	0
Broccoli ..... bundle	2	0	3	0	Parsley ..... per sieve	3	0	4	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsnips ..... doz.	0	9	1	0
Cabbage ..... doz.	1	0	1	6	Peas ..... per quart	2	0	4	6
Capsicums 100	0	0	0	0	Potatoes ..... bushel	4	0	6	0
Carrots ..... bunch	0	6	0	8	Kidney ..... do.	5	0	6	0
Cauliflower ..... doz.	6	0	12	0	New ..... lb.	0	3	0	4
Celery ..... bundle	1	0	2	0	Radishes doz. bunches	0	9	1	0
Cucumbers ..... each	0	6	1	4	Rhubarb ..... bundle	0	4	0	6
pickling .... doz.	0	0	0	0	Savoys ..... doz.	0	0	0	0
Endive ..... doz.	2	0	0	0	Sea-kale ..... basket	0	0	0	0
Fennel ..... bunch	0	3	0	0	Shallots ..... lb.	0	8	0	0
Garlic ..... lb.	0	8	1	0	Spinach ..... bushel	2	0	3	0
Herbs ..... bunch	0	3	0	0	Tomatoes .... per doz.	3	0	4	0
Horseradish .. bundle	2	6	4	0	Turnips ..... bunch	0	6	0	0

TO CORRESPONDENTS.

Books (*A Young Gardener*).—You can have "The Cottage Gardeners' Dictionary," free by post from this office if you enclose sixty-eight postage stamps, with your address. (*W. M. P.*).—Johnson's "The British Ferns." It can be had free by post from this office if you enclose forty-six postage stamps with your address. (*C. F. I.*).—We have a book full of plans, now printing, referring to the laying out of gardens which will appear in a month or two.

American Scuffling Hoe (*K. M. H.*).—We know of no one who makes it in this country. Any whitesmith could make one from the drawing.

Insect on Vine Stems (*J. D. D.*).—It is the Vine Scale, Coccus vitis. Scrape off the bark, and paint the stems with a creamy mixture compounded of soft soap ½ lb., flowers of sulphur 1 lb., black pepper in powder ¼ lb., and water 3 gallons. Boil them together twenty minutes.

Seaweed Manure—Pruning-time (*A Novice, North of Ireland*).—Seaweed is an excellent manure both for Sea-kale and Asparagus. It may be put on now, or at any time, whilst fresh, and be forked into the soil when the beds are dressed in autumn. Apples, Pears, and Plums are pruned in autumn when the leaves have fallen; but if summer-removing and pinching of shoots have been duly pursued, little remains for the knife to do in autumn.

Cost of Erecting a Vinery (*Amateur*).—It is quite impossible for us to state the cost. Apply to builders who advertise in our columns, and to others in your neighbourhood, and then make your selection from the estimates.

Kitchen Refuse (*Tulse Hill*).—The earth is the best and cheapest of deodorisers. Put the refuse on any vacant ground, and spread a little earth over it.

Ants (*H. K.*).—They may be driven away by sprinkling a little guano over their haunts daily, until they cease to appear.

Direction (*Ivo*).—Mr. Dobson, Woodlands Nursery, Isleworth.

Bean (*C. Marsden*).—We are quite sure that it is not a horse bean; but the best authorities at the Royal Horticultural Society could not help us to identify it without seeing a pod.

Grapes (*Z. Z. Z., Surrey*).—Write to Messrs. Webber & Co., Fruiterers, Covent Garden, and state what you wish.

Currants Blooming but Fruitless (*G. H. L.*).—We can assign no reason under your treatment for the Raby Castle Currant having fruitless flower-stalks, except the rich manuring. Prune in summer as before, but avoid the yearly rich top-dressing for a year or two.

Vine Unhealthy (*Blue*).—The wasted tendril-like branches are the result of the want of correlative action between branches and roots, partly the consequence of the roots being over-deep, of unripened wood, or of overcropping in the previous year. It may also, to some extent, be owing to the state of the foliage, which is completely overran with thrips. The Vines could do no good whilst in that state. Now, we can only recommend you to smoke your house four or five times with tobacco, leaving a night or two between each time. Before smoking shut up the house by three o'clock. Let all the Vines be dry, and then next morning early syringe freely with water at 100°. If the leaves are a fair sample you will have to repeat the process four or five times at least.

Preventing Grapes Shanking (*J. A.*).—For Vines planted thirty-five years we would recommend you to bring forward strong young Vines, and replace the old ones by degrees. Meanwhile, as the Vines now show so well and are so healthy, we would, to avoid shanking, run a deep drain in front of the border, and if the weather be dry water the border with manure water. If you could not make the drain you might make two or three dumb wells.

Air Roots of Vines (*E. S.*).—The roots on the stems will always be produced freely under two circumstances—first, when the atmosphere of the house is kept very moist, and secondly, when from various causes the temperature at the roots is much lower than the temperature of the house, or there is any other cause for the roots not rooting kindly at the time in the border. Some gardeners encourage them rather than otherwise; but though so long as vigorous they add to the strength of the Vine, they dry up at the colouring period when most strength is wanted. Another circumstance against them is, that whilst they root freely in the house, there is so far a check given to the free rooting in the border, and therefore we consider it advisable to cut them off rather than encourage them. As corroborative of these remarks, we may remark that this rooting inside takes place chiefly in forced vineries, where there is likely to be more difference between the top and the root temperature.

Cucumbers Failed (*W. M.*).—We could discover no insects on the Cucumber leaf, but there were marks as if thrips had been visiting you. It is a small insect, and jumps as you approach it. There are a few places that look as if visited by red spider. Neither insect likes the fumes of sulphur, such as given off by a hot-water pipe, or by the sun shining on it when plastered against a wall. Neither likes the free use of the syringe. For the thrips you will have to smoke with tobacco several times, and syringe freely; but if the generality of the leaves are as bad as those sent, we would advise bringing on young plants in another place. Take what you can from the present plants, then turn them out, removing all the soil, ants, and all, smoking the place with burning sulphur, keeping shut up for twenty-four hours. Then wash all the walls, fill them with fresh soil, and replant with the fresh plants. If the leaves are all as bad as the one sent, tobacco smoking would be more waste; if only a few are so, then smoke and syringe.

Watering Vines in an Inside Border (*An Amateur*).—Much will depend on the state of the weather. If the weather is very bright with dry wind the Vines will require water every day, especially if the border has been made of light loam that does not retain moisture long after watering, and the Vines are in a very vigorous state of growth. This applies to the period of the Vine setting its fruit, and so on to the commencement of the colouring of the berries, when they should not be so liberally supplied with water. With regard to the quantity of water to be given, "Amateur's" judgment should be his best guide. No one could state the exact quantity, as so much depends on the nature of the soil the border is composed of. If it is an open sandy soil a large quantity should be given at each watering; on the other hand, if it is a retentive soil the Vines are growing in, a less quantity will be sufficient, but small dribblets of water are not to be recommended at any time. Mr. Wills always applies it in sufficient quantity to thoroughly soak the soil the Vine or other plants are growing in. If the drainage of your Vine border has been properly seen to you cannot err by applying water in large quantities as soon as the roots of the Vine are in full action, and from that time to the period named above. As soon as all the berries have changed colour the water-pot may be put aside, only using it occasionally to keep the Vines from flagging. All the air that can be given with a higher temperature is also then required to give the berries that fine finish and flavour which are the most necessary and essential points the Vine cultivator should keep in view.

Rose Isabella Gray not Flowering (*A Ten-years Subscriber*).—We can only account for the Rose showing buds and not expanding them, from the atmosphere being kept too close and moist. Give more air, and keep the plant near the glass.

Propagating Daphne cneorum (*Idem*).—It is best propagated by layering into small pots placed in the ground around the plants. Any dispossable bushy shoots put in the soil up to the leaves, and pegged securely in the soil, and about an inch below the surface, will succeed. It is not necessary to make a slit or cut, but that facilitates the rooting. Shoots layered now will be well rooted by the autumn.

Propagation of Shrubs and Trees (*J. B. W.*).—Rhododendrons may be layered in spring before they begin to grow, or in autumn after the growth is perfected, and we think autumn preferable. Evergreen shrubs should be layered in September or in March, but the former is more desirable. Deciduous trees and shrubs should be layered in autumn after the leaves fall, and cuttings of evergreens, as Laurels, should be put in during September, or of Aucubas early in the month, and cuttings of Coniferæ at the end of August. We consider the cut in layering preferable to the twist.

Fern Fronds Blackened—Eaten by Woodlice (*Pteris*)—The young fronds die off before they unfold, from cold, wet, and sudden changes of temperature. Keep the atmosphere more humid, and avoid wetting the fronds, and give a slight increase of temperature. We never heard of woodlice being destroyed by "carbonic acid gas," and if you create such a gas in your fernery as to drive away the woodlice, we think your own life and that of those entering it will be jeopardised, to say nothing of the destruction of the plants. You say you have followed our advice and catch them by hundreds, but you really do not see that it lessens the quantity. We can only say, Set more traps or baits. We are certain you will exterminate them.

Pruning Evergreen Trees and Shrubs (*A Subscriber*).—Arbutus you may cut in in spring, but unless it grows unshapely it should not be pruned at all, and it as well as Evergreen Oaks should not have any pruning beyond the cutting out of a long naked branch, or the shortening of irregular growths. This should be done in spring before they begin to grow. Portugal Laurels should be pruned early in May, cutting them in to any shape or form required, and if compact close heads are wanted they should be gone over again at the end of August. Laurels may be cut in June, or if they require much cutting it should be done early in April. We, however, cut ours at the end of May or early in June, and again in August. Aucubas should be cut in spring before the growth is made, and then only; and the Laurustinus should be cut early in May, and the young growths not afterwards shortened, as they flower from the ends.

Solanum capsicastrum Treatment (*H. G. B.*).—The plant of which you sent us a fruit and sprig is Solanum capsicastrum, a greenhouse or half-hardy shrub. It may be placed out of doors from now until October, but is best kept in a cold frame, or cool airy greenhouse.

Genista or Coronilla after Flowering (*Idem*).—If the plant requires repotting it should be done at once. A compost of sandy loam and one-third leaf mould, with a free admixture of sand, will grow it well, and it may be cut in if necessary; but this should be done previously to potting, the latter taking place when the new shoots are a few inches long. The plant may be placed out-doors in summer, it being kept well supplied with water.

Propagating Arabis variegata (*C. F. I.*).—This plant may now have the side runners slipped off, and, being placed in sand in a shady border, and kept moist, they soon root. This may be done from now up to September; but we prefer dividing the plants now, and the divisions form nice plants for autumn planting.

Propagating Cerastium tomentosum (*Idem*).—The best method that we have tried is to put in cuttings of the last year's growth at the end of March or early in April, two or three together where wanted, inserting them so that they may be two-thirds covered by the soil. They should be put in in little tufts, or two or three branches together, about 6 inches apart from plant to plant, or from tuft to tuft. They make a splendid edging by July. Cuttings strike freely if inserted in sand and placed in a cold frame or shady border, and more quickly if placed in a mild hotbed. The plant is easy of propagation by division.

Roses for Training to House (*Idem*).—There are no evergreen Roses such as you require, but we think the following would please you, though they lose their leaves in winter, as every good Rose does:—*Bourbon*, Acidalie and Sir Joseph Paxton; *Tea-scented*, Climbing Devoniensis, Gloire de Dijon, and Maréchal Niel; and *Hybrid Perpetual*, Maréchal Vaillant, Madame Louise Carique, Madame de Cambacères, Lord Raglan, Jules Margottin, Madame Julie Daran, and Eugène Appert.

Insects in Cucumber Frame (*Constant Reader, I. M.*).—We think from your description that the insects of which you complain are woodlice. They cannot be thrips, as these confine their excursions to the leaves and stems, and may be found on the under side of the leaves of plants attacked by them; besides, tobacco smoke will destroy them, which you say it does not those ravaging your plants. Procure a toad or two and place in the frame. They will clear the bed of woodlice in a short time. We keep them in constantly.

Ferns (*K. M. H.*).—Write to Mr. Sims, Nurseryman, Foots Cray, Kent.

Preserving the Colour of Dried Flowers (*Rus.*).—Arrange and press the specimen flat; then put it into a tin dish partly filled with dry sand, cover the specimen with more dry sand, and place in an oven at a heat that will dry the plant quickly without scorching. We are told that this mode preserves the colours. We shall be obliged by information on this subject.

Names of Plants (*C. F.*).—Andromeda mariana. (*Constant Reader*).—Asplenium adiantum nigrum: 1, Tradescantia virginica; 2, Metrosideros citrina; 3, Veronica gentianoides. (*T. B.*).—1, Pellæa geraniifolia; 2, Selaginella Kranssiana (?); 3, Asplenium rhizophornm; 4, Pellæa hastata; 5, Asplenium falcatum; 6, Adiantum trapeziforme. (*H. B.*).—1, Adiantum pedatum (?); 2, Adiantum capillus-Veneris; 3, Asplenium marinum 4, Pteris chinensis.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 4th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 29	29.929	29.836	74	44	51	51	S.E.	.01	Densely clouded; showery; cloudy at night.
Thurs. 30	30.021	29.929	70	50	51	51	S.E.	.04	Very fine; overcast and mild; very fine.
Fri. .. 31	30.124	30.054	75	40	52	52	S.E.	.01	Uniform haze; exceedingly fine; fine at night.
Sat. .. 1	30.076	30.055	76	44	52	52	S.W.	.00	Very fine; very fine throughout.
Sun... 2	29.990	29.805	82	56	53	53	S.W.	.78	Cloudless and hot; very fine; heavy rain at night.
Mon... 3	29.819	29.587	63	43	54	54	W.	.05	Overcast and warm; rain; very fine at night.
Tues. . 4	29.956	29.919	68	40	55	54	W.	.00	Fine; cloudy; very fine at night.
Mean	29.987	29.883	72.57	45.28	52.57	52.43	..	0.88	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

ROYAL AGRICULTURAL SOCIETY'S POULTRY SHOW AT BURY ST. EDMUNDS.

It appears that the Committee do not intend to pay any attention to the appeal of "Nemo," either by postponing the date of entry or rescinding the rule which imposes a fine of 10*s.* per pen if the poultry is not sent.

I thought I would try them, and so sent an entry, but refused to "engage to forfeit and pay a sum of £20 if the birds should prove on entering the yard to be suffering from any infectious disease," or "to pay a fine of 10*s.*" if they were not sent, the "only exceptions to the fine allowed being death or disease." As "Nemo" says, "a thousand circumstances may occur" in that time to prevent one from sending them—"the hens may be broody," or some of them may be stolen, &c. Some thieves paid me a visit a fortnight ago, broke into my Duck-house, and cleared the place. I might have had them entered, and, to make amends for my loss, I should have had to have paid a fine of 10*s.* for losing them! Further, the exhibitor is called upon to state exactly the very pair of birds he intends to send; their exact age to a "day" must be stated separately, and lest he should not be able, or willing, to state the precise age, the Committee ask for the date of their hatching! I suppose they think poultry fanciers keep a "register of births," or that, if they happen to have a dozen cocks and hens of the same kind, they shall not be able to send any but the identical pair entered, although the others may at the time of the Show be far more eligible than those it was first intended should be sent. There is neither sense, reason, nor good policy in such regulations. Do the Committee think poultry fanciers as a class are so short-sighted as to send valuable birds from home to be penned up for a week when they know they are suffering from disease? The probability is the birds would be dead long before the end of the Show. Or do they think that after paying an entrance-fee of 5*s.* per pen every one would not try to send his fowls if at all practicable?

Well, I sent an entry, but stated I would not "engage to do anything so absurd" as to subscribe to these rules, but would agree to "forfeit the entry money if not sent, which was enough for all purposes." Mark the result. My entry money is returned to me with a note to the effect that the Committee "cannot accept my entry unless on the terms printed on the certificate." Surely such policy is suicidal, for, as "Nemo" says, "be and many others" will, no doubt, "keep their fowls at home."—J. R. J.

COMB OF THE DORKING HEN.

Your statement that "the comb of a Dorking hen should be moderate in size, well serrated, and should hang over the side," seems to me to reveal a weak point in the present system of judging, upon which I should like to have the opinion of Mr. Hewitt, or some other good authority.

Nothing is more essential in a Dorking cock than that his comb should be straight, and yet the comb of the hen "should hang over the side." You are not alone in this assertion. Mrs. Arbuthnot states that the comb "should fall over on either side." If this rule be correct, how, let me ask, are you to breed perfect birds? If I wanted cocks with perfect combs, surely I ought to obtain hens as well as cocks whose combs do not fall over, either on one side or the other? Yet you say, that "those who are skilled in, and very observant of poultry, look 'awry' on very upright combs in hens."

It seems, then, to me, that a straight comb ought to be no drawback to a Dorking hen, but rather one of her qualifications, provided it be correct in other respects. Unless, indeed, the present rule be modified, I do not see how you can expect to breed prize cocks from prize hens.—E. M. B. A.

[We forwarded the preceding to Mr. Hewitt, and this is his reply:—"In giving my opinion as to the formation of the comb of a Grey Dorking hen, I quite agree with your published statement, that the comb should be of moderate size, well-serrated, and hanging over the face on one side. The theory propounded by 'E. M. B. A.' of breeding from what is commonly known as a 'prick-combed' Grey Dorking hen, has been again and again attempted, but I never yet knew a single individual who persisted in the experiment a second year, for disappointment was the invariable issue, and the chickens thus produced proved utterly useless for exhibition. If your correspondent purposes breeding Dorkings, I would strongly advise him to adopt the very plan he repudiates at present—viz., mate together a cock having a perfectly upright comb with hens whose combs fold and then turn over the face, it matters not on which side. He will then find, if well-bred stock birds, that all his chickens will have combs exactly of the same formation as the parent birds. In Spanish fowls the same rule again holds good. It is only great age or want of health and condition that will cause the combs of either Spanish or Dorking cocks to fall over, if they are truly-bred birds. In the latter case, it very frequently happens that restored constitution causes the comb to become again as erect and firmly fixed as ever. The different formation of the comb is, in the breeds referred to, simply characteristic of sex, as is the mane of a lion or the antlers of a buck.—Edward Hewitt."]

POULTRY AT THE BERKS AND HANTS AGRICULTURAL SHOW.

We are glad to note an upward tendency in this Show. The experiment of moving from town to town is a success, and enlists new supporters at every place visited. In common with other agricultural meetings this suffered by the absence of cattle; but the show of sheep, horses, &c., was so good that the yard was filled, and no ugly gap in the rows told of the existence of the "Pest" in some parts. Hampshire is, fortunately, free from it. These shows are now so thoroughly understood, that they become training schools for farmers who are still in search of knowledge and anxious to learn. Thus, the mowing machines are no longer exhibited in a row in the implement yard, but they have their trial at actual work one against the other. No one can overestimate the importance of seeing machinery in motion, and we believe that more can be learnt by spending an hour with the machines in action, than by a great amount of study of diagrams and lectures.

The progress, however, is not confined to horses, sheep, pigs, or machinery. Our department also increases, and the notabilities of the poultry world meet for a friendly joust at Basingstoke, Reading, or Winchester, as the case may be. We have published the prize list, which will afford an earnest of the quality of the birds. Colonel Lane's *Dorkings* were of the highest merit, as were also the second-prize birds. These latter owed their position principally to the fact the hens were unequal, one very good, one very inferior. The White Dorkings were unusually large and good. There was a bird of great size in pen 15, but so decidedly yellow in his hackle and saddle that he could not be considered a white bird. The *Cochins* were *very* good, especially Miss Millward's prize pen. *Game* left nothing to desire, the Brown-breasted Reds being the best birds. This Show has a name for *Polands*. Mrs. Pettat's Golden and Mr. Edwards's Black with white tops maintained their old reputation. The *Spanish* were the best that have been ever shown at this Show. Mr. Pittis's first-prize pen of Golden-pencilled is among the best we ever saw. Though we cannot say as much for the Spangled, yet we are warranted in saying the first and second prize pens were very meritorious. There was great competition in *Brahma Pootras*, some of the best yards being represented. The prize birds were nearly even, and a pen of chickens shown by Mr. Fowler deserves notice. They were early, and we thought them birds of promise. We come now to a class that fairly demands an increase of prizes. Two are not enough for twenty pens to compete for. There were eight deserving prizes and only two to award. We have seldom seen so many good Duckwings as at this Show. The Variety class, comprising Andalusian, La Flèche, Malay, Gueldres, Silkies, Crèvo Cœur, and nondescript, was amusing as well as attractive. It may give rise to discussion some day. There was a dumpy La Flèche, all the points well developed, save that she seemed a gallinaceous "Widdrington," and stood "upon her stumps." Then we had a vulture-hocked La Flèche cock. This is the first time we have seen such a monster. We make no doubt that in 1869 there will be a party declaring that vulture hocks are the correct thing for a La Flèche cock. We hereby enter our protest. The Malays were excellent.

Then we came to *Ducks*. Aylesbury and Rouen took their places first and second. Some beautiful small Buenos Ayrean, and a cage of very tame and graceful Pintail were obliged to be content with high commendations.

Pigeons are daily becoming greater favourites. The present Show was no exception. The Carriers, Tumblers, Fantails, Trumpeters, and Magpies, noticed in the prize sheet, were all highly meritorious. In the Magpie class, one pair that took second prize was of surpassing beauty. The Various class showed Nuns, Barbs, Jacks, Swallows, and White Jacks.

Then large downy *Rabbits*, with ears dropping and trailing on the ground, called for our attention, the first-prize one measuring 19½ inches in length, and 4½ in width; the second, 18¾ in length, by 4½ in width. Foreign brought pretty Himalayans, but we doubt whether any of the rough-haired are really "Foreign." The next was a large class for

Rabbits (to include all points). Many were very good, and deserved prizes.

Captain Booth, an amateur in the neighbourhood, sent a most attractive and remarkable collection. Two large cages, placed on a carriage, were decorated with flowers and evergreens. They had perches of peeled wood, that shone in the sun, and were tenanted by a score of Golden and Silver cock Pheasants, all in full plumage. These had for companions Doves—White and Barbary. Another cage held a Chamois, and another a Bartavelle. All seemed perfectly happy and fearless, and it was apparent to all it was not "their first appearance on the stage."

The band of the 60th Rifles, the trials of hunters over six hurdles, a charming "locale," and an excellent and numerous attendance, combined to make this a rural Fête, as well as a successful Show. A working Committee of gentlemen, and the zealous and experienced services of the Secretary, Mr. Downes, deserved no other result.

Dorkings (Coloured).—First, Lieut.-Col. Lane, Bracknell. Second, C. Cook, Shoreham, Sussex. Highly Commended, Mrs. St. John; Lieut.-Col. Lane. Commended, H. Portsmouth, Basingstoke.

Dorkings (White).—First and Second, H. Lingwood, Barking, Needham Market, Suffolk. Commended, G. Butler, Bullsdown, Bramley.

Cochin-China.—First, Miss J. Millward, Newton St. Loe, Bristol. Second, Rev. S. C. Stamerton, The North Gate, Warwick. Highly Commended, Rev. W. C. H Hughes D'Aeth, Arborfield, Reading. Commended, S. D. Forbes, Portsea; Mrs. St. John.

Game.—First, S. Dupe, Everereech, Bath. Second, S. Matthew, Stowmarket. Highly Commended, J. Seken, Eltham, Kent; J. Mason, Worcester.

Polands.—First, Mrs. Pettat, Ashe Rectory. Second, T. P. Edwards, Lyndhurst. Highly Commended, T. P. Edwards. Commended, Mrs. Pettat.

Spanish.—First, A. H. Drummond, Maidenhead Thicket. Second, J. Jenner, Lewes. Highly Commended, F. James.

Hamburghs (Silver or Golden-pencilled).—First, F. Pittis, jun., Newport, Isle of Wight. Second, H. Pickles, jun., Earby, Skipton.

Hamburghs (Silver or Golden-spangled).—First, Mrs. Pettat. Second, T. Walker, jun., Denton, Manchester. Highly Commended, Mrs. Pettat.

Brahma Pootras (Light).—First, R. Dowsett, Pleshey, Chelmsford. Second and Commended, J. Pares, Postford House.

Brahma Pootra (Dark).—First, J. K. Fowler, Aylesbury. Second, F. James, Peckham. Highly Commended, Lieut.-Col. Lane; J. K. Fowler.

Bantams.—First, F. Pittis, jun. Second, Mrs. Pettat. Highly Commended, W. Boutcher, Notting Hill, London; Rev. J. De L. Simmonds; E. Sheerman, Chelmsford; Miss R. Read, Nutley, Micheldever; F. Pittis, jun.

Any Variety not Before Mentioned.—First, J. K. Fowler (Crève Cœur). Second, J. Hinton, Hinton, Bath (Malays). Third, W. Weston, Bramley, Guildford (Andalusians). Highly Commended Mrs. St. John (Silkies); S. C. Phair, Southsea (Crève Cœur.)

Ducks.—First and Second, J. K. Fowler. Highly Commended, T. C. Harrison, Hull; Miss J. Millward.

PIGEONS.

Carriers.—Prize, H. Yardley, Birmingham.

Tumblers.—First, J. Ford, Monkwell Street, London. Second, — Martin, Hulme Barracks, Manchester. Highly Commended, J. Ford; H. Yardley; — Martin.

Fantails.—First, Miss J. Millward. Second and Highly Commended, H. Yardley.

Trumpeters.—First, H. Yardley. Second, A. P. Maurice, Herriard Grange.

Magpies.—First, — Martin. Second, F. Pittis, jun.

Any Variety not Before Mentioned.—First, H. Cawood, Thorne, Doncaster. Second, H. Yardley. Highly Commended, H. Yardley; Master W. Barton, Basingstoke; H. Cawood; G. Hill, Winchester.

Rabbits.—*Longest Ears.*—First and Second, G. Hill. *Foreign.*—First, H. Cawood. Second, Mrs. M. Churcher, Stratton, Micheldever. *Variety to include all points.*—First, G. Hill. Second, F. Blunden, jun., Basingstoke. Highly Commended, J. Ruff, Basingstoke; J. Astlett, Polhampton, Overton; P. Warren, Southampton; H. M. Maynard, Holmewood, Ryde; H. Child, Birmingham; F. Blunden, jun.

Judge.—Mr. John Baily, 113, Mount Street, Grosvenor Square, London.

LAUNCESTON POULTRY SHOW.

This was held on the 29th of May, in connection with the Show of the Royal Cornwall Agricultural Association. There were 160 entries, and in all classes there were good specimens of the several breeds. The prize list is as follows:—

Dorkings (Coloured).—First and Second, Rev. A. C. Thynne, Poustow, Stratton. Third, R. W. Beachy, Kingskerswell Commended. T. Smalo.

Dorking.—*Cock.*—Second, F. Phillips, Calstock.

Dorkings (White).—First, Lieut.-Col. Archer, Trelaske. Second, Mrs. Wollecombe, Stowford Rectory.

Spanish.—First, J. H. Reed, Clastock (Black). Second and Third, G. T. Sleeman, Pyworthy. Commended, J. H. Nicholls, Lostwithiel (Black.)

Cochin-China.—First, F. Phillips, Calstock (Buff). Second, Mrs. Wollecombe (Buff). Third, T. E. Hawken, Lostwithiel (White.)

Game.—First, J. Francis, Kilkhampton. Second, T. Pickard, Stratton (Black-breasted Red). Third, A. West, Bude (Black-breasted).

Game.—*Cock.*—First, A. West (Brown-breasted). Second, J. Callacott, Tavistock (Black Red). Highly Commended, J. Callacott (Brown-breasted). Commended, R. W. Beachey.

Brahmas.—First, R. D. G. Consols, Tavistock (Dark). Second, J. H. Nicholls.

Malays.—First and Second, H. Darch, Stratton.

Cornish.—First and Second, D. Maynard, Stratton.

Hamburghs (Golden-pencilled).—First, J. F. Delmar Stratton. Second, J. H. Nicholls. Commended, N. Barter, Plymouth; J. F. Delmar.

Hamburghs (Silver-pencilled).—Prize, N. Barter.

Hamburghs (Golden-spangled).—First, J. F. Delmar. Second, J. Medway, Menheniot.

Hamburghs (Silver-spangled).—First, S. Blanchard, Tavistock. Second, W. M. Lancaster, Thuborough, Holsworthy.

Polands (Golden-spangled).—First, S. Sly, Werrington. Second, T. E. Hawken, Lostwithiel. Third, T. Chudley, Plymouth.

Bantoon.—First, J. B. Lyle, Launcells. Second and Third, J. S. Perry, Whiterow. Fourth, W. J. Lyle. Fifth, J. H. Nicholls.

Bantams (Black and other colours).—First, H. M. Brazeley, Bideford. Second, — Morgan, Egloskerry.

Guinea Fowls.—First and Second, W. M. Lancaster.

Ducks (Aylesbury).—First, J. H. Nicholls. Second and Third, J. Binds, Bridgerule.

Ducks (Common).—First, J. Jackman. Second, J. K. Cotton, Marhamchurch. Third, D. Brent, Linkinhorne.

Ducks (Rouen).—First, W. Raddall, South Petherwin. Second, A. Jeffery, Lifton.

Pigeons.—*Common.*—First, J. Brock. Second, J. Heal, Buckland Brewer. Third, J. K. Cotton. *Carriers.*—Prize, R. Carter, Penzance. *Barbs.*—Prize, R. Carter. *Pouters.*—Prize, W. H. Scott, Exeter. *Fantails.*—Prize, R. H. Clay, Launceston. *Jacobins.*—Prize, R. Carter. *Trumpeters.*—Prize, R. Carter.

The Judges were Messrs. H. Tyrrell, J. Dunning, E. Carlyon, and H. Leeworthy.

NEW BOOK.

The Practical Poultry-Keeper. By L. Wright. Cassell, Petter, and Galpin. 1867.

Another book on Poultry! Surely the fancy is increasing rapidly, for many new works must show the advance of the subject in popular esteem. Another new work, and another good one too, and one containing a considerable amount of original matter.

I own to being somewhat influenced by the size and appearance of books. The booksellers manage these affairs, and they're cunning men, manage them well. Somebody said that the west end of every town was its best part; it was a theory which did not bear the test of proof, but my book theory will. For instance: there is the large, broad-margined, ornamentally bound book with beautiful pictures; well, that is meant for a drawing-room table ornament, and the pictures are the best part of it. Then, of course, we all know what three purple-clad volumes contain, and how they are not read, but skipped and rattled through by young ladies (Would they had something better to do!), and how they are secreted by school girls from the severe-eyed spinster who rules them—for their good. Then there are the two volumes, rather large, of travels; the one thick volume for the gentleman's business-room; and the neat-looking book, handy to hold, and which opens nicely, and is of good type. This volume is meant to be read and referred to, it lies open so easily, and is therefore full of practical matter.

Now just such a volume is Mr. Wright's. It is divided into sections, which sections I will review in their order. The first is headed, "The Management of Domestic Poultry, with a View to Profit." In this section and the one that follows, on "The Breeding and Exhibition of Prize Poultry," lie the strength of the book. They are evidently written from personal experience, and there has been also a quick eye and a handy pen at work. Mr. Wright starts with the idea that his reader may be "totally ignorant of poultry-keeping," but that he wishes to learn and prosper. Perhaps some may object to the somewhat positive and commanding way in which Mr. Wright gives his instructions. Thus he says, "The pages of this [the first] section are not intended simply to be read and commended," but the orders are "meant to be done;" and "such food must be regularly given." Well, nothing of this sort can be too plainly put or too strongly expressed, in order that it may be implicitly followed. What Sir Charles Napier said he felt to want at Meanee, and what he wished the great Duke would write, was a few positively written plain orders, which a general could not forget: so poultry-keepers want a few positive, plain, good rules, so put as to be always remembered. Our author writes as an old uncle speaks to a young nephew—"Now mind, young man, you must do this, and you must not do that," &c. If by thus writing Mr. Wright makes us feel young again—well, that is not objectionable.

Mr. Wright insists on personal attendance, and bringing up the children of a family to look after fowls; and the consequence will be that very soon they will grow to love their charges. He lays, also, strong emphasis upon the grand rule of cleanliness in the fowl-house, and that it must be "perfectly waterproof, yet well ventilated, and yet no draught, and that sunlight must reach the birds some time during the day." His plans of poultry-houses are good. In choosing fowls he gives a good description to guide the beginner as to knowing a young bird, and also the absolute need of having young birds

every year if winter eggs are desired. In his hints on feeding I coincide with him in his recommendation to give the last meal in the day of whole corn. Indeed, all Mr. Wright's practical remarks are worth notice. Thus, the water-vessel he recommends, having an opening at the top closed by a cork, is much preferable for cleansing to the ordinary stone fountain. The chapter on Incubation is full of good hints. The advice about moisture is perfectly correct. I would advise that if you must sit a hen in a box on wood, as in a hayloft, cut a large turf, and set the box on it, and wet the turf now and then. Rearing, Fattening, and Diseases are noticed in their turn.

Passing on to Section II. we come to Mr. Wright's advice concerning "The Breeding and Exhibition of Prize Poultry." Profit and fancy are usually two separate things, yet fancy poultry may frequently pay well. Be it so, yet I wish the English lower middle class could make ordinary poultry so profitable, that the money spent on foreign eggs could go into English pockets. The chapter "On Scientific Principles of Breeding, and the Effects of Crossing," may not convince all minds, but it is well written, and very interesting. One remark is undoubtedly true, "without foundation by long-continued selection no strain can be depended on." This I have found to be true over and over again. The remarks on "Treatment of Fowls Before and After Exhibition," should be tested by the reader's own present and future experiences.

The third Section on "Different Breeds of Fowls," is less new, as upon its subject so much has been of late written. All except Brahma fanciers will, I fear, think the chapter on that breed too long in proportion to the space given to other varieties; but, without doubt, those who have contributed descriptions of the breed understand it thoroughly. I may instance Mr. Pares, Mr. Hinton, and others. This latter remark applies to, other contributors to this section. The chapter on Game fowls is written by "Newmarket," who gives his name, and of whom I may, therefore, speak as Mr. Trevor Dickens. I wish this gentleman would publish a separate book on Game fowls. He understands this breed thoroughly, and combines the now rare knowledge of the bird in its former pugnacious character, and its present character as a bird for the show pen. I ask, too, because even in a recent and large work the chapter on Game fowls is very meagre. Such a book well illustrated would be valuable, for it would record permanently facts already dying out, because the pastime is gone; and certainly Mr. Dickens knows thoroughly the Game fowl in all its varieties, and would not pass them over as of mere local knowledge. After the English breeds, the French varieties are mentioned at large. I imagine the Houdan will in time be extensively bred in England. Then the Bantams are briefly noticed—too briefly; and lest any fowl should be offended, the very barndoor bird is written about. Looking at him in this pretty book, I say—

> "This bird we know is neither rich nor rare,
> The only wonder is, how ever he got there."

Section IV. treats of "Turkeys, Ornamental Poultry, and Waterfowl." Section V. of "The Hatching and Rearing of Chickens Artificially," and the sixth and last Section treats of "The Breeding and Management of Poultry upon a Large Scale," as shown in France, at Belair. The last section I read in Cassell's monthly number.

Thus I have briefly reviewed Mr. Wright's work, and pronounce it to be what its title declares. More pretentious books on poultry, and kindred subjects, are often made up chiefly of quotations from well-known works, and have no claim to originality. Not so this book. The illustrations are not equal to the letterpress, but the waterfowl are better than the land birds. None but a poultry fancier can well illustrate fancy poultry; even to a good artist a fowl is a fowl, and no more, and its points are not seen. Plainer backgrounds cause figures to stand out sharper and clearer.

In conclusion, I may state that Mr. Wright is the "Nemo" of our columns; *now* "Nemo" is somebody. — Wiltshire Rector.

INCREASE OF PRIZES FOR CANARIES AND RABBITS.

Permit me to make a few remarks on the great falling off in the entries of Rabbits and Canaries owing to the small amounts given as prizes. For instance, fanciers living at a distance are obliged to forward their stock by rail, the cost of so doing, even for a single Rabbit or Canary, being more than the value of the first prize should it be fortunately obtained.

Now, in the opinion of a large number of fanciers, and having the best intentions towards these exhibitions, the following alterations would be advantageous, and I trust Committees will take them into consideration:—Instead of giving the small prizes that are now given, and only charging small sums for entrance, we wish for £1 as the first prize, and 10*s.* as the second, and 2*s.* or some such sum to be charged for entrance fees. The entries would be largely increased.

It is well known that long-eared Rabbits are very valuable, also pure-bred Belgian Canaries; Rabbits often being sold for from £5 to £10 in these exhibitions, and Canaries often for very large amounts.—John Taylor, *Sheffield.*

BEE-KEEPING IN RUSSIA.

(*Continued from page* 304.)

A pound of drained honey costs in these countries from 1½*d.* to 3*d.* Honey in the comb is somewhat more expensive, costing 3½*d.* per lb. Honey is always filtered on a warm hearth through a sieve of bast, in order to separate it from the wax. Wax, which however is very often adulterated with tallow and pea flour, costs from 9½*d.* to 1*s.* per lb. All this, however, as far as regards prices, holds good only for the more southern governments, as, for example, Isaratoff, Irenburg, &c. In the more northern governments, especially Moscow, the prices are different, and are often more than double what is above stated. In Moscow, on the honey-feast, the 1st of August, a pound of honeycomb costs from 1*s.* to 1*s.* 4*d.* per lb.; in autumn 10*d.*, and in the months of February and March, during the great fast (Lent), from 1*s.* 6*d.* to 2*s.* During the great fast an enormous quantity of honey is consumed, as all the orthodox Russians are allowed to drink tea, which is the chief beverage, only with honey or raisins, as sugar is not "pure for fasting," because it is cleaned with burnt bones. A pound of wax costs from 2*s.* to 2*s.* 6*d.* in winter. In Petersburg the prices are the same.

He who would send *en gros* fine honeycomb in frames from Germany to Petersburg in February or March could make a very good business of it, as honeycomb in Russia is comparatively bad—*i.e.*, it is in small pieces and broken, while those who buy usually look out for larger pieces, which, however, as Dzierzon's system is not known there, it is difficult to obtain.

In the western governments the bees are treated in an entirely different way to the east. In the north-west of the Russian governments of Nowgorod, Pskow, and the formerly Polish provinces of Ismolensk and Witebsk, they leave the stocks in the open air on their stands in winter without surrounding them with straw, &c.; nay, they do not even take the trouble to close the rabbets, &c. with clay, &c. The stocks being lagers, resting at a small height from the gronnd, are often buried so far in the snow that only the higher point is to be seen; (they do not lie horizontally as has been mentioned). But, nevertheless, although they are lagers—as the head is raised they are to be considered as half-lagerstocks—and are exposed for six months to intense cold, which often reaches — 30° R. (32° below zero of Fahr.), and lasts long; most of them winter well. The snow, which almost buries them, is perhaps the cause of it; nay, in one of two stocks belonging to a neighbour of mine in the government Ismolensk, where I lived in the years 1860-1862, the lower door had fallen out in the winter of 1860-1, and the opening, more than 1 foot by 6 inches, remained open until spring without the stock dying. I tried the same experiment with my klotzbeuter in the winter 1861-62, of course on purpose. The lower opening remained the whole winter exposed to storm and snow, and on the 21st of April the bees very cheerfully flew out for the first time to clean themselves, and I counted at most from 100 to 150 dead bees. The following day they carried in pollen of Anemone pulsatilla.

In spring, as soon as the bees have held their flight for cleaning themselves, all the lower part of the comb in the stock is removed, so that only 18 inches remain.

This is considered necessary, that the bees may "work more industriously." After cutting out the combs, the stocks which are poor in honey receive a few pounds of honey, which is mostly granulated. The swarms which, in spite of the bad treatment, issue rather early here, often in the beginning of the first week in June, are all placed singly, in spite of their light weight of 2, at most 4 lbs.; the latter weight only occurs exceptionally. Only late swarms, which often weigh merely three-quarters of a pound, are united together. In the month of July honey is taken in proportion from all the old stocks, even from those that have given swarms, if only a few ounces, and 6 inches or somewhat more of the lower part of the combs, even if filled

with brood, is cut away that the bees may not "be idle." In autumn the honeycombs are cut out, and honey is given to all strong stocks which are poor in honey, according to their want. Empty combs are cut away at the top of the hive, and honeycombs are inserted instead, and they try by means of wooden pegs to give them a regular position.

Stocks which are too weak are destroyed, but the bees are not killed, nor united with other stocks, but they let them disperse where they like. In all these countries little honey is obtained, in spite of the luxurious vegetation. In spring the best gathering is from anemones, especially pulsatilla, different kinds of willows, poplars, maples, ashes; in summer from Rhamnus frangula, Prunus padus, Sorbus aucuparia, white thorn, and bilberry, from large areas of Thymus serpyllum, later from the very extensive buckwheat fields, and lastly, late in summer and in autumn, from the enormous quantity of heath. The pines and fir trees which alternately form large forests here, are of no use to the bees in these countries.

In the same manner as in the countries mentioned, the Esthen Letten and others in the provinces on the Baltic manage their bees, with this difference, that the klotzbeuter-ständers, which are the principal hives there, are taken into a cold chamber, &c., during winter. In the more southerly-situated western provinces of Russia and in Poland the stocks are taken for the winter into dry cellars, or under the floors of dwellings, after a few boards have been removed and a hole has been dug in the ground for this purpose.

The owners of a great many stocks dig large pits on elevated spots, place the stocks in them, and cover the pits with thin beams or refuse boards, on which is placed a thick layer of straw, and a sloping roof to shoot the water off. It is strange that the bees are wintered in the open air in a large part of the north-west, and in-doors, &c., in the milder south. In spring, when the snow is gone and great cold is no longer to be expected, the stocks are again placed in the open air, but no care is taken that every hive be put in its former place; this is nowhere in Russia attended to. The following day, after placing the stocks again in the open air, they are cleaned of dead bees, rubbish, mouldy combs, &c. All the lower part of the combs, to the first cross of the klotzbeuter, more than a foot high, is then cut away, just as we have seen in the more northern part of Russia. At the swarming season almost all the swarms which issue are placed singly, the smaller ones in smaller hives, which are often but 6 inches in diameter, but from 1¾ to 2 Prussian ells (3½ to 4 feet) long or high. Only late swarms and very weak ones are united. In autumn all the stocks, whether young or old, which have too much or too little honey for the winter, are killed with brimstone by the owner himself, and a similar mixture is obtained as in the east of Russia.

In South Russia, the desert districts, where straw cylinders are used, the bees are treated in the same way.

In Poland proper, partly the swarming system, partly the pruning method is employed, and in the same manner as with stocks with immoveable combs in Germany; the hives are kept in special bee-houses. The artificial increase of stocks, however, is as unknown in Poland as in all the other parts of the Russian empire. I was stared and laughed at in the different parts of Russia when I told the clergymen, &c., of artificial swarms, &c. That the drone is a male and the worker a neuter is quite strange to the people in all Russia. With regard to the queen, they are all clear about her in Russia proper; the queen they consider the female, and call her mother; but the workers are said to be the males. Only in many parts of Poland and the provinces on the Baltic the queen is taken for the male bee, the workers for females, and the drones for the nurses of the brood, for which they (the drones) are taken throughout the whole empire.

Boviat (fungue), is nowhere used for fumigation. Foul brood is only known in the western provinces; lately, however, it has appeared also in the government of Moscow, thus rather easterly; in the proper east, however, this disease is not known at all. Dysentery only appears but rather frequently in the west. Strange to say, this disease is unknown elsewhere, although the bees in Russia are obliged to remain inside the hive during the whole of six months.

With regard to klotzbeuters, I have still some remarks to make. They are mostly made of oak or fir trees, less frequently of lime trees, besides being worked more roughly. Inside they are hollowed out carefully (smoothly), and equally in diameter. They are distinguished from the German klotzbeuters by having a piece of wood driven in as a wedge outside, just in the middle, through the opening of the door, which piece of wood projects at both sides and forms two handles, and at the same time divides the stock outside into two equal parts, each of which receives a solid door—a thick board. In the western governments only where lager-klotzbeuters are kept they are not divided by a piece of wood. It may also be mentioned, that in all Russia proper some honey is taken from the strongest stocks at the end of July, besides the proper honey harvest in autumn, in order to be able to supply the public with honey on the 1st of August, the honey-feast, when every wealthy Russian provides himself more or less with honey.—Edward Assmuss.

A Bee City.—Mr. Carpenter, one of the great bee-masters of Hampshire, died a few days ago. He had two hundred stocks. He and his ancestors have resided at Godfrey's Farm at Beaulieu, in the New Forest, for upwards of a century.

OUR LETTER BOX.

Crève Cœur's Feathers Ragged (*C. E.*).—This is the time of year when the plumage of fowls is brittle and shabby. Feathers that are damaged and sickly now, will not be renewed till next moulting time, when, we have no doubt, your bird will regain a perfect appearance. Thousands of hens that enjoy every possible advantage are in the same plight as yours.

Killed by Over-kindness (*T. E. P.*).—Your chickens are over-stimulated; they do not require to be under glass, nor do they want so much egg as you appear to give. Move them out on to grass, doing so in the heat of the day, that the change may not be too great or sudden; keep the hen under the rip, but let the chickens run about. They will then do well. They are dying from being over-stimulated, and you may discontinue the egg altogether.

Dudding Scissors (*W. R.*).—We find no difficulty in obtaining them at any good cutler's. Those used by grooms for clipping horses answer the purpose very well.

Incubator Regulator (*K.*).—We never heard of a regulator which could be affixed to the ordinary gas burner of an incubator; such, for instance, as a mercury float that would, in rising and falling according to the temperature, turn on and diminish the gas.

Rice for Fowls (*Clara*).—Rice is the least nutritious of all the foods available for poultry. It may be given in moderate quantities, either during very hot weather, or when fowls have become too fat and it is desirable to reduce them.

Dorking Cock Paralysed (*C. G. S.*).—The loss of power in the legs, walking backwards, and staggering, are indications that a blood-vessel is ruptured on the brain. Keep the bird quite quiet and cool, and on low diet; the oozing then sometimes, but rarely, ceases, and we have known the birds afterwards recover.

Pigeons Laying Soft Eggs, &c. (*W. I. I.*).—Your Pigeon troubles have arisen from one chief cause—the birds being confined. Had they been at liberty, they would by exercise and picking up various things have kept themselves free of disease, which high feeding without air and exercise will frequently bring upon these birds, and Trumpeters are not very active, but will sit in the same place for hours. Our Pigeons walk about the garden, and at some periods of the year feast on green seeds, as their deeply dyed beaks plainly show. We would advise you to sow a large shallow box or pan with lettuce, cress, and cabbage seeds, and when nicely grown put the box in your loft. Pigeons like to pluck at green food when growing, but do not care for it when cut, apparently being better able to nip off a piece when the plant stands firm and fixed. Also feed low, avoiding tares and beans, and let your birds have a bath daily, and salt in the house. Mashed potatoes would also be beneficial, likewise a dose of castor oil. Inflammation from high feeding and confinement being the disease, the cure must rest in any means which will lower the system, and remove the fever.

Pheasants—Duration of Sitting—Feeding (*W. S. H.*).—Pheasants sit twenty-two days, but sometimes a day or two longer. You can keep cock Pheasants of every sort together, provided there be no hens—you cannot keep them together in pairs. The young require to be fed on eggs boiled hard, and chopped fine, on curd made of milk and pressed dry, bruised wheat, rice boiled in milk, dough made of oatmeal, and if they are sick, on ants' eggs.

Feeding Cygnets (*W. I. I.*).—Let the cygnets and the old Swan be shut up for three or four days. They should have a shallow vessel, with growing grass at bottom, some lettuce cut in long narrow strips, and oatmeal enough to cover the surface of the water. After they are at liberty, it is still well to feed them for a time in this way.

Chicken-eating Cat (*Edith*).—We like a cat on our hearthrug, but we like our chickens more; so if our cat killed the latter, we should condemn the cat to a watery death. You could only save your chickens and the cat too by having the chickens within a wire enclosure—wired at the top as well as the sides.

Queen Laying a Plurality of Eggs in One Cell—Frame Hives (*Edward Fairbrother*).—We do not fancy that there was any defect in the unfortunate queen, which was merely impelled to relieve nature by depositing a plurality of eggs in every available cell, owing to the circumscribed breeding space to which she was restricted in so weak a colony. Could you once have succeeded in raising the population to a sufficient extent, we have little doubt that she would have proved herself fully equal to the occasion. We perfectly coincide with you in your appreciation of frame hives, and in considering that apiarians generally are indebted to Mr. Woodbury for making public and disseminating his modification of, and improvements upon, this German and American invention.

Artificial Swarms (*W. H. Steer*).—Do not attempt to equalise the population by reversing the position of the hives, as by so doing you would risk the loss of one or both the queens. We should not attempt to artificialise under such circumstances, but should prefer waiting the issue of natural swarms.

WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 13—19, 1867.	Average Temperature near London.			Rain in last 40 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
13	Th	Leeds Horticultural Show.	72.0	47.9	59.4	19	45 af 3	15 af 8	27 af 4	3 af 2	11	0 20	164
14	F	[Promenade.	72.5	48 3	60.4	18	44 3	15 8	28 5	31 2	12	0 8	165
15	S	Royal Horticultural Society, Show and	72.9	48.5	60.7	17	44 3	16 8	27 6	2 3	13	before	166
16	Sun	Trinity Sunday.	72.7	48.8	60.7	17	44 3	16 8	23 7	37 3	14	0 17	167
17	M	[and General Meetings.	73.0	47.6	60.3	22	44 3	17 8	14 8	18 4	O	0 30	168
18	Tu	Royal Horticultural Society, Fruit, Floral,	72.4	49.7	61.0	20	44 3	17 8	58 8	4 5	16	0 43	169
19	W	Royal Botanic Society's Show.	70.9	48.5	59.7	21	44 3	18 8	86 9	56 5	17	0 56	170

From observations taken near London during the last forty years, the average day temperatnre of tho week is 72.3°; and its night temperature 48.5°. The greatest heat was 93°, on the 19th, 1846; and the lowest cold 30°, on the 15th, 1850. The greatest fall of rain was 0.84 inch.

HUMEA ELEGANS CULTURE.

FROM the stateliness of its growth, the graceful disposition of its silvery-brown plumes, and its agreeable fragrance, Humea elegans must be considered one of the most pleasing of decorative plants. Planted at the back of a border of bedding plants, dotted here and there in extensive arrangements of these, placed in the centre of a large bed, or grown as a specimen on a lawn, any shortcoming which it may have as regards showiness of bloom is more than compensated for by its distinctness of habit and elegance of form.

The plant was grown much taller (some say finer), fifteen or twenty years ago than now; one might then have seen Humeas with stems as thick as a Dahlia-stake, and quite as long, without so much as a leaf—wonderful were the Humeas of those days—but since then symmetrical plants well provided with foliage and bloom, without the disfigurement of a long bare stem, are the objects aimed at.

Those who cultivate the Humea should remember that it is a biennial; the moment the seed has germinated the tendency of the plant is towards flowering; it grows one year and flowers the next, being vigorous and compact, or tall and ungainly, according to the treatment. If tall "leggy" plants are wanted, then sow the seed in spring, keep the plants pot-bound throughout the summer, allow the foliage to flag from want of water, keep them as closely together as trees are planted in a coppice, and warm and at a distance from the glass in winter; but if you wish for fine plants with spray touching the ground or stretching beyond the rim of the pot, they must from the day they appear above the soil be kept gently progressing, must never flag from want of pot-room or water, and must have the same advantages as a specimen Pelargonium or Cineraria—namely, plenty of air, light, and room.

The seed may be sown any time during May, but from the 1st to the 15th is to be preferred. It is not, however, now too late to sow the seed, more especially for planting-out in the following year about this time. A pan a foot in diameter will be sufficient to grow plants for a large garden, and a shilling packet of seed will be ample. The pan should be well drained, and filled to the rim with fine soil, sifted through a half-inch sieve, an inch or so of the riddlings or rough portions being placed over the drainage, and then the fine soil. The compost may consist of two-thirds light loam, one-third leaf mould, and one-sixth of silver sand. Previous to sowing, the surface should be made quite smooth by patting it gently with the bottom of a flower-pot, and after the seeds have been scattered evenly over the surface they should be just covered with fine soil. A gentle watering must then be given, and the pan, having been placed in a hotbed, the soil should be kept shaded and moist. A Cucumber or Melon-frame, or any ordinary hotbed will do. The soil should be kept moist but not wet, and in a few days the plants will appear. The pan ought to be kept near the glass, and air must be given daily, and water when necessary. When the plants show their second or rough leaves, the pan should be placed near the glass in a cold frame, or, which will answer better, it may be set in a position shaded from the midday sun, and covered with a hand-glass, the top being put cross-cornerwise early every morning. Give a gentle sprinkling overhead at 4 P.M., and put on the top closely. If placed in a frame the pan ought to be shaded from bright sun in order to prevent the soil becoming dry, and air should be liberally admitted, but in the morning only, closing early in the afternoon after gently sprinkling with water overhead.

The plants will not appear to make much progress at first, but when one can take them between the finger and thumb, and with a stick lift them from the pan, pot them off singly in pots from 2½ to 3 inches in diameter, using the same compost as at the time of sowing, and set the pots closely together on sand in a cold frame. Give a gentle watering after potting, put on the lights, keep close, shade from 9 A.M. to 4 P.M., and at the latter hour give the lightest possible sprinkling of water, and shut up closely. In a few days the plants will recover; then admit air early in the morning, shade for an hour or two during the hottest part of the day, shut up closely by 4 P.M., and give a gentle watering overhead. Water should also be supplied in the morning, for the soil in the pots must be kept moist.

Under the above treatment the plants will grow rapidly and strongly. They must not stand still an hour: therefore when their pots are full of roots at once shift them into four-inch pots. Afterwards keep them in the frame, pursuing the same treatment as before, and in a fortnight they will have filled the pots with roots, and should have six-inch pots without delay, employing the same compost and affording the same treatment as before, only they must have room. These pots will soon be filled with a mass of roots, and now for a change of treatment. Tilt the lights back and front from 7 A.M. to 5 P.M., the lights being drawn on at the former hour and off at the latter. The plants will therefore be covered by the lights tilted over them by day and be exposed at night. Water overhead when the lights are drawn down, but before doing so water at the root if the soil is dry, using weak liquid manure if necessary. By the early part of August the plants will have hard balls of soil and roots; choose then an open situation, but sheltered from winds, and prepare a bed 1 foot deep in every way the same as for pricking-out Celery, using good loam enriched with a dressing of 3 inches of rotten manure and 3 inches of rough leaf mould. Give the plants a good watering before turning them out of their pots, and plant them in the bed in quincunx order at 1 foot apart every way; then well water them overhead at once, and afterwards whenever the weather is hot and dry; in such periods watering at the root must also be well attended to.

About the middle of September, and not later than the end of the month, the plants should be lifted very carefully with a fork, on a damp day if possible. Preserve the old ball entire, but shake away the loose soil; then place them in nine-inch pots, affording liberal drainage, and using a compost of one-third loam from rotten turf—that from a pasture where the soil is a rather strong yellow loam is to be preferred—one-third thoroughly decomposed cowdung, and a like proportion of rough or three-parts-decayed leaf mould, with the addition to the whole of about one-sixth sharp sand. The loam should be torn in pieces with the hand, the cowdung should be so dry as to be easily broken with a spade, the leaf mould ought to be passed through a three-quarter-inch riddle to free it from sticks, and all should be well mixed and incorporated. The soil must be well worked in amongst the roots, and the plants ought not to be potted deeper than they were before, or only very little. They may, after potting, be placed in a cold pit, a gentle watering and a slight syringing overhead being given, and the frame kept close and shaded for a few days until the plants recover from potting so as to endure sun and air without flagging. After they have become again established, air should be given very freely whenever the weather is mild, and protection must be afforded them by mats placed over the lights. They may remain in the cold pit or frame until the close of November, or even later if the weather be mild, when they should be removed to a cold and airy greenhouse, where they cannot have too light and roomy a position. The plants must be watered to keep them gently growing, in fact the foliage should not be allowed to flag; no water, however, is to be given until the soil becomes dry, then afford a watering sufficient to show itself at the drainage. This is the grand secret of watering, for it is positively injurious to water a plant when the soil is wet, and it is equally hurtful to allow it to droop from the soil being too dry. As regards temperature, it is sufficient during winter if the plants be kept from frost; even a few degrees below freezing with a dry atmosphere will be better than a few degrees too much heat. Protection from frost is all they require, and air on all favourable occasions.

In February the plants may be shifted into 12-inch pots, employing the compost already mentioned, and this is all the potting I consider necessary for subjects intended to be planted out in the flower-garden. Let the plants continue in a cool house until the end of March; then place them in a cold pit, and let them remain there until the end of May, giving air on all favourable occasions, and keeping them as cool as possible, but protecting from frost. Sometimes when I have had little room I have not potted them early in spring, but have fed them with liquid manure instead; but the plants were not so fine as those which had had a shift.

The ground where Humeas are to be planted should have a liberal dressing of manure and leaf mould, or holes, each sufficiently large and deep to hold a barrowful of the compost named for potting, should be dug for the plants. After planting give a good watering.

If specimens are required for the greenhouse or for other purposes, some of the most promising plants may, early in January, be potted in 12-inch pots and kept in a cool house. By the end of February they will have filled the pots with roots; they may then have a final shift into 15 or 18-inch pots, and at this potting the soil may be rougher but not richer, though the loam may be of a stronger nature. They should be carefully watered until the roots are working in the fresh soil, and may after February have a sprinkling of water overhead night and morning, but nothing approaching to a close atmosphere. Of air and light they cannot have too much, and they cannot be kept too cool so long as they are merely protected from frost. They must have plenty of room, and if inclined to grow on one side more than another the pot should be reversed, placing next the light that side of the plant which seems disposed to grow least. When they have filled the pots with roots they may have liquid manure at every alternate watering, and afford a liberal supply of water when it is required. If aphis appear fumigate with tobacco paper, and thrips may be disposed of in the same manner; but either of these insects attacking Humeas show the air to have been too close, warm, and dry. Keep cool, airy, and well watered.—G. Abbey.

Retinospora filifera.—The first-class certificate for this plant, which was exhibited on Tuesday, the 21st of May, was awarded to Mr. John Standish, of the Royal Nursery, Ascot, and not to Messrs. J. Veitch & Sons as was stated. Mr. Standish holds the entire stock of this splendid Conifer, which he is now sending out.

A VISIT TO LEIGH PARK.

I recently accompanied a friend to the gardens appertaining to Leigh Park, near Havant, Hampshire, the residence of W. H. Stone, Esq., M.P.; and amidst the varying lights and shades of an April day, passed a few hours most agreeably amongst the objects of Nature's handiwork which are met with there.

The neat little town of Havant, lying on the South Coast Line, about seven miles from Portsmouth, is easily accessible to holiday-seekers, and the attractions of the Park are fully appreciated in summer by visitors from miles around. The entrances to the place are from the Portsmouth turnpike road; that which afforded us ingress is about a mile and a half from Havant, and is provided with a handsome lodge, the architectural design of which is the first evidence of taste which attracts the eye of a stranger. After entering at this place, and following a carriage drive winding amongst "ancestral trees," we came to a slight wire fence separating the shrubberies and precincts of the mansion from the park without. Passing this, my attention was first arrested by a curious-looking building, of which the masonry, grey with age, proclaimed its antiquity. A most intelligent guide who accompanied us through the grounds informed us that this was the old library, the present mansion being a modern erection, and occupying a different site from that of the old house. The library is a beautiful octagonal building, and its eight oriel windows contain excellent paintings relating to the Staunton family, to whom the estate formerly belonged. The harmonious blending and richness of the colours in these windows is very attractive to the eye, and the skilful workmanship displayed in the carved surroundings enhances their beauty.

From near this place a straight path diverged towards the aquatic-house, where the Egyptian Paper plant (Papyrus antiquorum), Bullrushes of the Nile, interspersed with the blossoms of the Victoria regia and other water plants, displayed themselves in natural perfection. The gold fish here were remarkable for their tameness as well as beauty.

Leaving the aquarium we passed into the Orchid-house, which is connected. Here are many new and rare species of Orchids, some of which are very fine specimens. Of these most of the names have escaped my memory; but my attention was forcibly attracted by a profuse-growing Allamanda Schottii trained to the roof, which it traverses. Besides looking very ornamental, it excellently guards off the direct rays of the sun.

Leaving this house, and going westward of this range, we passed through two vineries and a Heath-house. In the latter the numerous varieties were most brilliant and lovely—so lovely, that in gazing on the beauty of the Australian plants I was reminded of those lines—

> "Another Flora there of bolder hues
> And richer sweets, beyond our garden pride,
> Plays o'er the fields."

I lingered amongst these charming plants, and shall always retain a pleasing recollection of the Heath-house at Leigh Park. Here a glass case 4 feet wide is connected, and extends the whole length of the west wall. This is made serviceable for many purposes as well as the protection of the trees on the wall from late spring frosts, and preventing the fruit from being damaged by heavy rains when approaching maturity.

Retracing our steps to the Orchid-house, and making our way through the entire range, we were next introduced to two more vineries, one of which contained coloured Grapes, all, I believe, of the Black Hamburgh kind, and admirably trained.

The Peach-house completed this range. Two other vineries were passed, and then we came to the pineries, consisting of four ranges, two of them lean-to's and the other two span-roofed pits. The two latter contained successions of fruiting Pines, all presenting a very healthy appearance.

Next we were shown a large and lofty stove, in which were fine specimens of flowering and ornamental-foliaged plants and tree Ferns—viz., two plants of Maranta Porteana, and also of Maranta zebrina, two handsome specimens of Cycas revoluta, Zamia Lehmanni, Philodendron pertusum, Musa Cavendishii, in fruit, Ixoras, &c. Among the tree Ferns were Dicksonia antarctica, Alsophila australis, Cyathea dealbata, C. me-

dullaris, and Cibotium princeps. Some seedling Gymnogrammas were also worth mentioning.

A propagating-pit was the next building we entered. This contained cuttings of plants of valuable species, all affording good evidence of their careful culture. We were then conducted along the back of the building, taking the orchard-house on our way; and passing by a side walk towards the east we entered the new kitchen garden. This has only been recently formed, but promises full well under the management of Mr. Young, the head gardener. It is three acres in extent, admirably laid out, and walled in, and the various crops are in a thriving state. There is a number of new pits for forcing vegetables, and Cucumbers and Melons were in a flourishing state.

Passing out of the kitchen garden, through the shrubberies, we soon arrived at the new carriage drive, on one side of which is a thickly-planted border of Rhododendrons, and on the other a neat plantation of choice Conifers on a well-kept piece of turf. We continued our walk along this winding and ornamental drive towards the mansion, which is about 350 yards north-west of the kitchen garden. A new conservatory, a lofty and imposing structure, graces the south front to the mansion. Being unfinished there is nothing worthy of remark here, save the extensive and lovely landscape which is opened to the view, bounded by the hills of the Isle of Wight, and with the sea in the foreground. Hayling Island is distinctly seen, and right and left is spread a panorama of picturesque scenery as beautiful as any in this country. A narrow spiral staircase conducts from this conservatory to a vaulted corridor, open to the west, on the lowest level of the west front. This is designed as a promenade on rainy days. From this corridor we passed on to the green turf before the house. It is an elegant edifice, very unlike the general massive and stately architecture employed in England. The style is pure Swiss, with all the gables and terraces prominent as in a mountain château.

Descending about 500 yards of gentle slope we came to the borders of a sheet of ornamental water. This miniature lake, three acres in extent, has an island in the centre nearly covered in the season with brilliant Rhododendrons. We were told that a former owner of the estate had a regular war sloop lying here completely rigged and manned, and a ruined fort is still shown on the island, which was made to resist mimic bombardments, for the amusement of a generation that has now passed away. There are various points of attraction in the grounds we traversed around the water, such as the rustic bridge connecting the island with the mainland, some rustic shady retreats, a very pretty grotto, and a rockery, where hardy Ferns were flourishing amongst early spring flowers.

Leaving this we ascended the hill towards the Conifer ground. Having gained one of the walks which wind through a part of the pleasure grounds, we passed one of the Rose gardens and along the south and west side of the fruit garden. Here we saw Camellias in full bloom trained to the wall. Not one of them had suffered by the severity of the late winter. We were now among the Conifers. All these are certainly worthy of remark individually, and the least that I can say is, that amongst others two magnificent plants of Araucaria imbricata may be seen there without a blemish in any tier from top to bottom; also, a Picea pinsapo, superior to any which I have seen in uniform growth and size. A few steps further brought us past another Rose garden to the old conservatory, the freshness and beauty of its tenants being unsurpassable, and the grouping and arrangement excellent.

Making such a hurried visit I had not time to pay attention individually to the various specimens of plant life with which this place is enriched.

Altogether Leigh Park is a very charming place; and as Mr. Young (to whose courtesy I shall always feel indebted), is continually making improvements, in which he is warmly supported by the owner of the estate, I have no doubt that in the course of time it will become one of the finest residences in England.—George Newlyn, *Dangstein.*

EFFECT OF FROST ON PITH OF ROSES.

I observe that your correspondents "D., *Deal,*" and Mr. Radclyffe, have alluded to the dark brown colour in the middle of the wood of many Roses, and it is a very interesting question why some trees were injured in the bark, and others in the centre of the wood. Can it be that the discoloration of the centre was the effect of the frost on the roots?

Three facts have suggested this explanation:—1st, The rods when pruned were mostly discoloured near their base, and were in many cases quite untouched towards their tips. 2nd, Those pruned in April were much more discoloured than those pruned in March, though of the same sorts and in some cases even on the same plants, from which I think we may conclude that the colour was connected with the rise of the sap. 3rd, I found some briars as much affected as the most tender Roses.

It would also be interesting to know what is the effect of the brown colour on the health of the plant. Some which I gave up as hopeless, have made thus far very vigorous shoots; while others which appeared at first more promising have withered and died.—E. H.

THE CLOUDS AND SUNSHINE OF ORCHARD HOUSE CULTURE.

I have been much charmed with the letter of your correspondent, "A Constant Reader," page 342, in which that great end is attained—instruction without dulness. How fatigued one often feels with some of our good gardeners because they cannot tell what they know without being constrained. I feel half ashamed to contribute my experience of orchard-houses something after the manner of our friend and instructor; it seems something like those authors who, after Cervantes, could never write a novel without a species of Sancho Panza in attendance on their hero.

Sunny.—My Cherry trees, all pyramids in pots, are crowded with fruit, from some of which I gathered ripe fruit May 24th. I have had a Cherry feast daily since, and shall continue to do so till the end of July. My earliest sorts, some of them now (June 3rd), dead ripe, are the Early Purple Guigne, Guigne Très Précoce, and Empress Eugénie. The trees are in 13-inch pots; they were top-dressed early in November by taking out the surface soil 4 or 5 inches in depth round the sides of the pots, and replacing it with loam and rotten manure.

Cloudy.—Some fine seedling Peach trees three and four years old in 11-inch pots, after blossoming abundantly and giving much promise, shed all their blossoms without setting any fruit. The cause I attribute to their roots being slightly injured by the severe frost in January. The pots were protected with hay, but not sufficiently to resist the severity of the frost of that month, when on the 5th the thermometer outside registered 28° of frost.

Sunny.—Some larger seedling Peach trees in 13-inch pots, and all my Peach and Nectarine trees budded on Plum stocks, are bearing fine crops. They were top-dressed early in November, were soundly watered a week afterwards, and remained dry all winter.

Cloudy.—Some fine standard Peach trees growing in the border of the house, and capable of bearing a peck each, shed their blossoms, and have set but very few fruit, while those mentioned in the preceding paragraph, in pots, and standing on the floor of the same house, are full of fruit. I am at a loss to account for the failure of the standard trees, as they are in the most vigorous health.

Sunny.—My numerous Apricot trees in pots are full of fruit. They have been treated according to the new rules given to us by Mr. Rivers in his paper written for the Congress last spring—that is, not top-dressing them in autumn as usual, but giving them a sound watering about the first week in November, and allowing the pots to remain dry till the first week in March; they are then watered; and in May, as soon as the fruit are the size of horse beans, the surface mould is scraped off to about 2 inches in depth, and a surface-dressing of finely chopped manure, or horse-droppings from the roads thoroughly saturated with strong manure water, is placed on the surface of the pots 3 or more inches deep, so as to be above the rim of the pot, and made concave to retain water. It is good practice to add malt combs to this compost. This dressing should be renewed in June and July if it settles down sufficiently. This is the grand secret of Apricot culture in pots under glass, and has never failed.

Cloudy.—Some fine old Apricot trees, which were top-dressed last October, and which blossomed abundantly, have set but a scanty crop of fruit. This top-dressing was an experiment. I am now quite satisfied that the new method is the best.

Sunny.—My pyramidal Pear trees in pots, which blossomed beautifully in my orchard-house in April, have set fine crops of fruit. I was sorely tempted to place them out of doors during the hot weather in May, thinking that summer had

arrived, but I resisted it, and thus escaped the lamentable frost of the 25th ult. I may add that I have been equally fortunate with my Plum trees in pots.

Sunny.—Mulberries in pots have a fine crop on them. Those out of doors are all destroyed by the late frost.

Sunny.—Expecting frosts on the nights of the 22nd, 23rd, and 24th of May, I had my ground vineries covered with mats. Not a sheet is touched, and there is a fine show of bunches. Vines on walls are much injured, and in some places the fruit all destroyed.

My orchard-house trees have been treated exactly as recommended in your columns and elsewhere, having had the soil renewed in autumn—with the exception of the Apricots referred to—and surface-dressed in spring and summer. Last April while the trees were in full bloom my house was open night and day, as the weather was mild and humid. I have found the treatment of my trees, as described in this article, attended with unvarying success. I mention this because your correspondent "C. P.," page 394, seems to have discovered a newer and a better way of treating his trees; for he says, referring to Mr. Rivers by name, "I have departed from his rules more and more every year with manifest advantage." This is a serious assertion, and I think Mr. Rivers and many of your readers will feel greatly obliged by his saying promptly how he manages his trees, and stating his climate and soil. We, your readers, have apparently something of consequence to learn, and I feel assured that Mr. Rivers will thank him for giving a fresh stimulus to orchard-house culture. —Hortulanus.

MANCHESTER NATIONAL HORTICULTURAL EXHIBITION.

Mr. Findlay's great undertaking may be looked upon as a grand success. We have only seen one exhibition to surpass it, and the Manchester people may well be proud of the success attending the efforts of the able Curator of their Botanic Garden in getting up an Exhibition very little inferior to the Great International Horticultural Exhibition held at South Kensington last year. Friday and Saturday were very unfavourable. The rain pouring down on Friday deterred many intending visitors from going to the Exhibition; but in the afternoon the weather cleared up, and the sun shone out brilliantly for an hour or so. Visitors to the number of three thousand then assembled to witness the grand sight prepared for them. Saturday morning opened more favourably, and the day continued very fine up to about two o'clock, when the rain fell again; but in spite of this a good company assembled, and towards evening the weather cleared up, and the number of visitors increased.

Roses were the only subjects which we thought were not so well represented as at Kensington last year; they were, however, very good. The Orchids were wonderfully fine. The splendid collections shown by J. A. Turner, Esq., were, probably, the finest ever seen at any provincial exhibition, and the magnificent groups of new and rare plants sent down by Messrs. Veitch & Sons attracted much attention. These were grouped on a circular stage in the centre of the Exhibition-house, and were seen to great advantage. On one side of them were arranged the designs for table decoration, on the other the fruit. For the time of the year, this was well represented. Mr. Meredith and Mr. Dixon were placed equal first for two bunches of Black Hamburgh. Mr. Meredith's, although much finer and better-grown bunches, were not so well coloured as Mr. Dixon's. We think the Jurors acted wisely in giving an equal first to both exhibitors. Mr. Dixon exhibited Grapes largely. He certainly proved at Manchester that he is capable of growing good Grapes, as well as writing a good book on raising Tricolor Pelargoniums.

On entering the Exhibition-house we were pleased to see a box of Ixias and Sparaxes; these were contributed by Mr. R. P. Ker, of Liverpool, and were very beautiful. It is to be hoped that this fine class of bulbs will become more generally grown. The collection exhibited on this occasion contained colours of every conceivable shade. Near it we observed a most beautiful plant, Anthurium Scherzerianum, as well as the curious Amorphophallus nobilis, exhibited by Mr. Bull, of Chelsea. The stove and greenhouse plants staged in the Exhibition-house were remarkably fine; those exhibited by Mr. Baines, gardener to H. Micholls, Esq., were especially good. Mr. Mitchell, gardener to the Duke of Hamilton, likewise exhibited fine collections; he had also a splendid collection of fine-foliaged plants, which, though they had travelled up from Scotland, were in excellent condition. Mr. B. S. Williams was an extensive and very successful exhibitor, his plants being in very fine condition. His collection of fine-foliaged plants was very beautiful, and so were his Orchids and stove and greenhouse plants.

At the conclusion of the labours of the Jurors, the Council of the Manchester Botanical and Horticultural Society and the Judges, sat down to an excellent cold collation in a tent in the gardens. In the unavoidable absence of the President of the Society, J. A. Turner, Esq., Sir J. Watts presided, and after the loyal toasts, proposed "Prosperity to the Society and the Exhibition." The Rev. Canon Gibson responded, and proposed "The Judges," coupled with the name of Mr. Mitchell, who replied in a very able and satisfactory manner. Mr. W. Thomson, of Dalkeith Palace Gardens, also made a very interesting speech, and endeavoured to impress upon the Council of the Society the necessity of giving greater prominence to fruit in their future exhibitions. This object, Mr. Thomson said, would be gained by offering better prizes. Mr. Thomson spoke in very flattering terms of the success of the Exhibition, and said, excepting the Great International of last year, it was the best he had ever seen. Mr. Thomson in the course of his remarks said that he thought the Manchester people were exceedingly fortunate in having in Mr. Findlay a gentleman so well able to manage their horticultural exhibitions, and although he had never seen Mr. Findlay before that day, he was very glad to congratulate him on his great success. Sir J. Watts gave the "Health of the Exhibitors," to which Dr. Ainsworth responded, and after speaking in high terms of the arrangements, thanked Mr. Findlay, on behalf of the Council, for the great exertions he had made, and said the Council would adopt the suggestions Mr. Thomson had offered them, and would in future offer more liberal prizes for fruit. Mr. B. S. Williams, of Holloway, also responded, remarking that he was the oldest exhibitor in London, and, therefore, he had had that experience which justified his saying that after the International of last year, this was the best flower show that had ever been seen. Mr. Williams, in the course of his remarks, said he hoped the gentlemen present, and others, would not allow the Manchester Botanical Society to remain any longer in debt; it was a disgrace, he said, to Manchester. He hoped they would put their shoulders to the wheel. He was willing to give, on his part, something towards it, and if they would only help him they might soon have a very flourishing society, free from debt and care. Other speakers followed, all expressing their gratification at the success of the Exhibition. The Chairman next gave the health of the Curator, Mr. Findlay, which was received with great applause. Mr. Findlay returned thanks in a very feeling and appropriate speech, in the course of which he said he thought there was nothing calculated to enlighten and elevate the minds of the inhabitants of large towns so much as horticultural exhibitions. The health of the Chairman was then given, and in returning thanks he very warmly commended Mr. Findlay for his origination of the Exhibition, and for the excellence of the arrangements which he had superintended.

The following is a list of the principal awards:—

AMATEURS.

Fourteen Stove and Greenhouse Plants, in flower—1st, Mr. H. L. Micholls, Bowdon; 2nd, Sir J. Watts, Cheadle; 3rd, the Duke of Hamilton.

Twenty Exotic Orchids, in flower—1st and 2nd, Mr. J. A. Turner, Pendlebury; 3rd, Mr. T. Jones, Whalley Range.

Eight Greenhouse Azaleas, in flower—1st, Mr. L. Hanmer, Woodford; 2nd, Sir J. Watts; 3rd, Mr. J. Stevenson, Lark Hill.

Ten Fine-foliaged Plants—1st, the Duke of Hamilton; 2nd, Mr. J. Stevenson; 3rd, Mr. T. Hobson, Wilmslow.

Eight Stove or Greenhouse Ferns—1st, Mr. T. Hobson; 2nd, Mr. J. Stevenson; 3rd, Mr. J. Broome, Fallowfield.

Twelve Hardy Ferns—1st, Mrs. Hampson; 2nd, Mr. W. Pearson, Prestwich; 3rd, Mr. J. F. Rowbotham, Chorlton-cum-Hardy.

Ten Zonal Pelargoniums, in flower—2nd, Mr. H. K. Balstone, Bowdon.

Ten Variegated Pelargoniums—1st, Capt. Starkie; 2nd, Mr. E. Phillipi; 3rd, Mr. J. Lees, Hawkwood.

Six Show Pelargoniums, in flower—1st, Mr. T. Agnew, Manchester; 2nd, Mr. J. Broome.

Six Fancy Pelargoniums—1st, Mr. T. Agnew; 2nd, Mr. J. Broome.

Six Rhododendrons, in flower—3rd, Mr. T. Hobson.

Six Amaryllis, in flower—1st, Dr. Ainsworth, Manchester.

Three Palms—1st, the Duke of Hamilton; 2nd, Mr. J. Broome.

Three Tree Ferns—1st, Mr. H. Micholls, Manchester.

Six Fuchsias, in flower—1st, Mr. H. K. Balstone; 2nd, Mr. W. Bindloss, Eccles; 3rd, Mr. W. Chittick, Bowdon.

Eight Stove and Greenhouse Plants, in flower—1st, Mr. J. Stevenson; 2nd, Mr. T. Kendall, Cheadle.

Eight Greenhouse Azaleas, in flower—1st, Sir J. Watts.

Twelve Exotic Orchids, in flower—1st, Dr. Ainsworth; 2nd, Mr. J. A. Turner; 3rd, Mr. T. Baker, Manchester.

Six Herbaceous Calceolarias, in flower—1st, Mr. E. Tootal, Weaste; 2nd, Mr. J. Keymer, Timperley; 3rd, Mr. R. Andrew.

Six Shrubby Calceolarias, in flower—1st, Mr. J. Keymer.

Four Greenhouse Azaleas, in flower—1st, Mr. L. Hanmer; 2nd, Mr. H. Micholls; 3rd, Sir J. Watts.

Ten Miscellaneous Plants—1st, Mr. S. Schloss, Bowdon; 2nd, Mr. T. Kendall; 3rd, Mr. H. Micholls.

Eight Exotic Orchids, in flower—1st, Mr. J. Stevenson; 2nd, Mr. T. Kendall; 3rd, Dr. Ainsworth.

Six Fine-foliaged Plants—1st, Mr. S. Schloss; 2nd, Mr. E. Philippi.

Twelve Miscellaneous Softwooded Plants, in flower—1st, Capt. Starkie.

Four Stove and Greenhouse Plants, in flower—1st, Mr. T. Kendall; 2nd, Sir J. Watts; 3rd, Mr. E. Philippi.

One Azalea, in flower—1st, Mr. L. Hanmer (Juliana); 2nd, Mrs. Hampson; 3rd, Mr. T. Kendall.

One Exotic Orchid, in flower—1st, Mr. T. Kendall (Saccolabium retusum); 2nd, Mr. T. Jones; 3rd, Dr. Ainsworth.

One Cape Heath, in flower—1st, Mr. T. Kendall (Erica ventricosa coccinea).

One Rhododendron, in flower—1st, Mr. L. Hanmer.

NURSERYMEN.

Twelve Stove and Greenhouse Plants in flower—1st, Mrs. E. Cole and Sons, Withington; 2nd, Mr. B. S. Williams, Holloway.

Six Greenhouse Azaleas, in flower—Mrs. E. Cole & Sons; 2nd, Mr. B. S. Williams.

Ten Roses, in flower—1st, Messrs. H. Lane & Son, Great Berkhampstead; 2nd, Mr. R. Ashcroft, West Derby.
Sixteen Roses, in flower—1st, Messrs. Paul & Son, Cheshunt; 2nd, Mr. J. Shaw, Bowdon.
Ten Show Pelargoniums, in flower—1st, Mr. H. May, Bedale.
Ten Fancy Pelargoniums, in flower—1st, Mr. H. May; 2nd, Mr. C. Rylance.
Twelve Exotic Orchids, in flower—1st, Mr. B. Williams; 2nd, Mr. J. Shaw; 3rd, Mr. S. Stafford, Hyde.
Eight Cape Heaths, in flower—1st, Mr. B. S. Williams; 2nd, Mrs. E. Cole & Sons; 3rd, Mr. J. Shaw.
Twelve Fine-foliaged Plants—1st, Mr. B. S. Williams; 2nd, Mr. J. Shaw; 3rd, Mr. S. Stafford.
Twelve Amaryllis, in flower—1st, Mr. B. S. Williams.
Thirty-six Hardy Ferns—1st, Mr. J. Shaw; 2nd, Mr. Ashcroft; 3rd, Mr. S. Stafford.
Twenty Hardy Rhododendrons, in flower—1st, Messrs. G. & W. Yates, Manchester; 2nd, Mr. J. Shaw.
Ten Hardy Rhododendrons, in flower—1st, Mr. J. Shaw; 2nd, Msssrs. G. & W. Yates.
Six Tree Ferns—1st, Mr. B. S. Williams; 2nd, Mr. J. Shaw; 3rd, Mr. S. Stafford.
Ten Zonal Pelargoniums, in flower—1st, Messrs. G. & W. Yates; 2nd, Mr. R. Barnes, Macclesfield; 3rd, Mr. J. Shaw
Ten Variegated Pelargoniums—2nd, Mr. R. Barnes; 3rd, Messrs. G. and W. Yates.
Twelve Miscellaneous Plants—1st, Mr. B. S. Williams; 2nd, Mr. J. Shaw; 3rd, Mr. S. Stafford.
Fourteen Greenhouse Azaleas, in flower—1st, Messrs. H. Lane & Son; 2nd, Mr. B. S. Williams; 3rd, Mrs. E. Cole & Sons.
Fifty Hardy Evergreen Trees and Shrubs—1st, Mr. J. Shaw, Bowdon; 2nd, Messrs. G. & W. Yates; 3rd, Mr. S. Stafford.
Fifty Hardy Alpine and Herbaceous Plants—1st, Messrs Dickson and Brown, Manchester; 2nd, Mr. S. Stafford; 3rd, Messrs. G & W. Yates.
Twenty-five New and Rare Plants—1st, Messrs. J. Veitch & Sons, Chelsea; 2nd, Mr. B. S. Williams; 3rd, Mr. J. Shaw.
Three Pots of Lilium auratum, in flower—1st, Mr. B. S. Williams; 2nd, Mr. J. Shaw.
Six Fancy Pelargoniums, in flower—2nd, Mr. C. Rylance.
Eight Yuccas or Beaucarneas, 1st, Mr. B. S. Williams; 2nd, Mr. J. Shaw.
Six Stove and Greenhouse Plants—1st, Mrs. E. Cole & Sons; 2nd, Mr. B. S. Williams.
Eight Dracænas and Cordylines—1st, Mr. B. S. Williams; 2nd, Mr. S. Stafford.
Ten Stove or Greenhouse Ferns—1st, Mr. B. S. Williams; 2nd, Mr. J. Shaw.
Six Roses, in flower—1st, Messrs. Paul & Son; 2nd, Messrs. H. Lane and Son.

FRUITS.

Ten Orchard-house Trees, in fruit, in pots—1st, Messrs. H. Lane and Son.
Two Vines, in pots—1st, Messrs. H. Lane & Sons; 2nd, Mr. T. Statter, Stand
One Queen Pine Apple—1st, Mr. T. N. Miller.
One Providence Pine Apple—1st, Capt. B. Glegg.
One Smooth Cayenne Pine Apple—1st, Mrs. Holland, Altrincham.
Two Bunches of Black Hamburgh Grapes—1st, Mr. T. Dixon, St. Helens, and Mr. J. Meredith, Garston, equal; 2nd, Capt. B. Glegg; 3rd, the Bishop of Manchester.
Two Bunches of any other Black sort—1st, Mr. T. Dixon; 2nd, Mr. H. J. Hopwood; 3rd, the Bishop of Manchester.
Two Bunches of Muscat of Alexandria Grapes, 1st, Mr. W. Chittick, Bowdon; 2nd, Mr. T. Dixon; 3rd, Mr. E. Greaves, Barford.
Two Bunches of any other White kind, 1st, Mr. T. Dixon.
Four kinds of Grapes—1st, Mr. T. Dixon, and Mr. H. J. Hopwood equal; 3rd, the Bishop of Manchester.
One Green-fleshed Melon—2nd, Mr. J. Meredith; 3rd, Mr. H. Littledale.
One Scarlet-fleshed Melon—3rd, Mr. W. Chittick.
Six Peaches—2nd, the Duke of Leinster; 3rd, Mr. R. O. Leycester, Knutsford.
Six Nectarines—1st, Capt. B. Glegg; 2nd, the Duke of Leinster; 3rd, Mr. H. J. Hopwood.
Six Dishes of Fruit—1st, Mr. H. J. Hopwood.

TOBACCO DUTY-FREE FOR GARDENING PURPOSES.

I HAVE noticed in your valuable paper one or two communications respecting ground tobacco and tobacco powder, and your correspondent "P. H. G." puts several questions, to which you will, perhaps, kindly permit me to reply. I am the more anxious to do this because I have been for some time in correspondence with the Government on the subject of duty-free tobacco, and the Company I have the honour to represent has spared no trouble or expense to induce the Lords of the Treasury to accede to the wishes of the gardening public. Indeed, if I mistake not, you noticed in your pages last year the efforts made in this direction.

Now, the boon spoken of by your correspondent "P. H. G." is granted, but under such conditions that it may be useful if I explain them as briefly as possible.

The Honourable the Board of Customs will permit the tobacco to be prepared only in a warehouse bonded according to the usual regulations imposed upon all bonded premises, and the process of grinding and mixing must be carried on under the direct superintendence of the crown officers. The tobacco so prepared has to be mixed with certain proportions of sulphur and assafœtida, and it can be issued to the gardener for use. The drugs are added by the Government to protect the revenue against fraud, by rendering the tobacco unfit for the purposes to which it is usually applied.

Of the advantages conferred by the Government in this concession I need say nothing, as the gardening public know the great value of tobacco.

On a former occasion the Government authorised our Company to prepare tobacco juice, and stipulated that the juice should be treated with logwood in order to protect the revenue, and this preparation also has been widely used by Hop-growers. —J. F. TAFE, *Secretary, Richmond Cavendish Tobacco Company, Liverpool.*

HARDY PLANTS IN FLOWER DURING APRIL, 1867,

AT BITTON, GLOUCESTERSHIRE.

April 1. Vinca minor
minor alba
minor fl. pl.
" 3. Anemone ranunculoides.
Narcissus aurantius plenus
Cypri
" 4. Adoxa moschatellina
Fragaria vesca
Lathræa squamaria
Oxalis acetosella
Draba aizoon
" 5. Almond
Crocus obesus
" 6. Plum
Double-flowered Peach
Kerria japonica
Pulmonaria azurea
Narcissus, Double Jonquil
Queen Anne's Jonquil
Macleayi
White Polyanthus
propinquus
Sibthorpii
lacticolor
Scilla italica
Tulipa sylvestris
" 9. Fritillaria imperialis
Spiræa prunifolia fl. pl.
Waldsteinia geoides
Saxifraga tridactylites
Blackthorn
" 10. Cowslip
Pear
" 11. Narcissus montanus
incomparabilis
incomparabilis fl. pl.
semipartitus
tenuior
Myosotis montana
Saxifraga crassifolia
Borago orientalis
Lithospermum fruticosum
" 13. Caltha palustris
Primula cortusoides
Pachysandra procumbens
Narcissus aurantius
Fritillaria meleagris
" 15. Berberis aquifolium
" 17. Daphne Fioniana
Ribes americanum
Dondia epipactis
Narcissus bulbocodium
triandrus
orientalis
" 18. Scilla hyacinthoides
Melandrium Presleyi
Jeffersonia diphylla
Muscari moschatum
Scilla amœna
Pulmonaria virginica
Viola biflora
Soldanella crispa
Saxifraga geranioides
virginica
Sibbaldia procumbens
Aremonia agrimonioides
" 19. Geranium tuberosum
April 19. Apple
Berberis dulcis
Darwinii
Dalibarda fragarioides
" 22. Saxifraga irrigua
Skimmia japonica
Cliveden Pansies
Myosotis arvensis
Cardamine pratensis
" 23. Trillium grandiflorum
Tulipa cornuta
retroflexa
" 25. Doronicum pardalianches
Lonicera Ledebourii
" 27. Fritillaria nigra
Asarum europæum
Scilla nutans
patens
Geranium phæum
Anemone stellata fl. pl.
Allium subhirsutum
Trollius europæus
Senecio aureus
Scilla patula
Pulmonaria davurica
Orobus vernus plenus
Valeriana dioica
Arabis turrita
Bellis perennis prolifera
Fritillaria meleagris fl. pl.
Iberis corifolia
Adysetum orientale
Euphorbia epithymoides
Rubus spectabilis
Saxifraga incurvifolia
Stansfieldii
cordiifolia
Gmelini
Dielytra spectabilis
Staphylea pinnata
Arum maculatum
Lilac, purple and white
Lunaria biennis
" 29. Magnolia purpurea
Parus spectabilis
Convallaria polygonatum
majalis
Prunus sinensis fl. pl.
Berberis empetrifolia
Ribes niveum
Gentiana acaulis
Daphne cneorum
Ornithogalum umbellatum
Tiarella cordifolia
Phlox nivalis
Pæonia cretica
Iris pumila lutea
Alyssum saxatile compactum
Fritillaria persica
Saxifraga Hirsklandi
Primula involucrata
Rosa Banksiæ
" 30. Jasminum revolutum
Lychnis flos-cuculi
Bellevalia romana
Saxifraga granulata fl. pl.

—H. N. E.

MR. JOHN WATERER'S RHODODENDRON EXHIBITION.

NOTWITHSTANDING the excessive cold of the past winter and the frosts of May, Mr. Waterer's display of Rhododendrons in the Royal Botanic Society's Gardens, Regent's Park, is as extensive and beautiful as in former years. It is just now in perfection; how long it will continue so we cannot venture to say, for it is to be feared that the present intensely hot weather will somewhat abridge the duration of the bloom. Conspicuous among the newest varieties is Michael Waterer, which has been exhibited under the name of Annihilator. This Mr. Waterer considers the best hardy late crimson variety known. Joseph Whit-

worth, deep purplish lake, is, as last year, remarkable for its large flowers and conspicuous anthers; Madame Masson, white, with orange spots, is pleasing; and Sir Robert Peel, crimson, is a very bright-coloured, free-blooming variety. Duchess of Sutherland, Mrs. Fitzgerald, Lady Alice Peel, Sidney Herbert, and Warrior, maintain their character as fine varieties. Most of the older kinds are well represented, and of these Bulleriannm, Bylsianum, Lneiferum, Lady Eleanor Cathcart, Mrs. John Waterer, Lady Godiva, and John Waterer, are very fine.

FRUITFUL VINES BECOMING UNFRUITFUL.

In the autumn of last year I took charge of a large vinery, and at that time it was crowded with young wood; likewise there were, I thought, too many canes, and a very heavy crop, the half of which ripened; the remainder shrivelled. The overcrowding I remedied by thinning out; and at the pruning season, each Vine having two leaders, I cut one off. The excessive crop I conjectured was too far advanced to do any good by thinning, consequently I allowed the bunches to remain. This spring all the buds readily started and have made strong shoots; but, much to my surprise, the trees have scarcely shown any fruit. They have had every necessary attendance, disbudding being duly practised, as soon as the shoots were of size to choose from. The Vines are planted in an outside border, and were watered in the first week in May. Can I do anything to enable me to have a few bunches this year? Would cutting back this year's wood to the first joint be of any service?—A Subscriber.

[Yours is a puzzling case. No doubt you did right in thinning-out the wood, and lessening the number of canes in winter, so far as the future welfare of the Vines is concerned; but you may have overdone the cutting off of shoots and wood, so far as the first season afterwards was concerned. At any rate, several times in Mr. Fish's practice, when he has lessened the space on the roof occupied by an old Vine, expecting it to come much stronger in consequence, he has found there was no improvement, perhaps the reverse, the first season afterwards, though in the second season there was a manifest improvement. There being less top branches to carry, the roots seemed at first to receive a paralysing influence from the want of the usual correlative action. In one case, some ten years ago, a very fruitful Vine yielded very little fruit the first season after such a severe lopping, but, as in your case, it made fine wood and bore well afterwards.

We attribute your want of fruit chiefly to two causes. First, the excessive crop left on the Vines, which would have a tendency to exhaust them as respects fruit-bearing; and, secondly, the wet and sunless autumn, unless fire was used, would be apt to leave the wood in an immature state, and this we are more inclined to believe, as the Vines show such vigour of growth this season.

As to what you propose, we would decidedly advise you to rest satisfied with the good wood the Vines are making, getting it well browned and hard by October, and to look for next season to repay you for your attention. We have known several cases of fruit being obtained by cutting back the young green wood of this season's growth to the first and second joint; but we never knew that to be done except under two circumstances. The cutting took place at the end of February or the beginning of March, on Vines that were started early, but did not show fruit to please; and then the pruning-back had to be applied to the whole Vine. If a few shoots were left unpruned they took all the growth; and the shoots made this year, when cut back, broke very weakly in consequence. Even then the Vines were greatly injured. Mr. Fish says that when a young man he helped to conduct a large experiment. Vines in a Pine-stove broke well and showed fairly, but the bunches almost wholly ran to tendrils instead of flowers. The roots were all outside. He attributed the evil less to a deep border than to the border being flat, if anything sloping to the house, to an unusually wet cold autumn, and to a severe frost, when the Vines had broken and the shoots were some 2 inches in length, there being nothing to protect the border. He always thought the chill and the want of action at the roots caused what would have been bunches to lengthen out into something like tendrils, on which the flower-buds that showed all shrivelled up or dropped off. The gardener, after much consultation and self-communings, pruned the Vines back in March just as proposed, and though fruit was obtained, it was neither abundant nor fine, and the wood was much weaker than usual. In fact, the sight of the Vines was quite sufficient to show that such pruning should not be done.

Mr. Fish adds, that a considerable amount of care had to be exercised to bring the Vines back to their original condition, and he recollects that in two or three cases the Vines showed scarcely any fruit after this second pruning, and in their case he selected the best shoot that came from near the base, trained it without stopping, and took off all the other shoots as it reached them, until about the middle of July the old stem was cut out altogether, and the one shoot then had all the strength of the Vine, and the following year this shoot showed abundantly, and fine bunches too.

Mr. Fish knows something of having two crops from the same Vines in the twelvemonth, but no one would think of this as a matter of prudence or economy. He has several times in pits cut back Vines in June that had borne a crop, selected a young shoot, and had it well ripened in autumn to bear early the following summer; but that is very different from what "A Subscriber" proposes. Had Mr. Fish pruned back such shoots on the Vines that bore fruit in June he would have had a fair chance for a late crop, though most likely he would have been deprived of an early one next summer; but the cutting of such ripe wood in June is different from cutting green wood that, it is presumed, did not start until March or April. His advice, then, is to make the most of the good wood for next season. Lest, however, "A Subscriber" is resolved to try, or some correspondents may give other advice, a circumstance may be mentioned in connection with the experiment already referred to, and which the gardener could not account for. Before he pruned back these unfortunate Vines the temperature of the house was considerably lowered for eight or ten days, and this was continued for about ten days afterwards, the temperature at night averaging from 50° to 55°, instead of from 60° to 65° and onwards, it being considered that this lower temperature for a time would do no harm to the Pines beneath the Vines. This was done upon the supposition that the Vines would break a second time better if they enjoyed a comparative rest. Afterwards Mr. Fish came to the opinion that it might have been better if the temperature had not been lowered, but kept at the usual rate before and after cutting. He cannot say that up to the present day he has quite decided on that point, but has no hesitation in advising "A Subscriber" to make the most of the present growth.]

THE CYLINDER OR TOWER VINERY.

This is a new invention by the originator of the ground vinery. The above form of vinery or plant case has been invented, not to supersede the ground vinery, which is a very neat, useful, and, if made after the plan of its originator, a very economical structure, costing as few shillings almost as pounds are being charged for it; but this I will enter further into in a future paper.

The cylinder vinery has many advantages. It stands erect, and thus all the beauties of the plant are seen. Sorts required to be thinned can be grown in such vineries. The plants become covered with dew in warm nights, if the top be left open. The continual circulation of air (resembling ebullition), without draughts, is an important feature. Light is in every direction admitted to the leaf and fruit. The plants are not subject to be infested by vermin of any kind. The whole structure is air-tight when closed. Air can be admitted at the bottom of the cylinder, but it has not been found necessary, a constant circulation being sustained by the warm air rising, and the cold air passing downwards. The structure is very light and novel; it can be made of any height, up to 15 feet, or more; it is very strong, from the scientific principle on which it has been constructed, and it is the cheapest of glazed structures.

I will now endeavour to describe it. The materials used are glass, wood previously boiled in creosote to render it indestructible, a few slips of iron, and a small quantity of rather stout copper wire, no putty or paint being used. The vinery can be erected in a few hours by any one of common intelligence. I will describe a structure of 10 feet in height and 11½ feet in circumference, capable of holding three Vines. For this six wooden bars 2½ inches square, and 12 feet long, are required, the glass being 20 inches by 15, 21-oz., fourth quality, costing about £1 2s. 6d. These bars (rendered as hard, and almost as heavy as ebony, by being boiled in creosote, which gives a brownish colour, and if taken out of the boiler hot becoming dry in a few minutes, are grooved to the depth of five-eighths of an inch at the two inner angles, the grooves being

so formed as to grasp the glass tightly. Each bar is driven 2 feet into the earth, and they are about 19 inches one from the other, so as to form a six-cornered figure, giving two sheets of glass 21 inches wide to each Vine.

In order to prevent the edges of the glass being too much pressed on by the glass above, and also to prevent the sheets being broken when the whole edifice is bound tightly by the copper wire, a very simple contrivance has been adopted—an iron bar of the same thickness as the glass, one-fourth of an inch wide, and one-eighth of an inch longer than the width of the glass, is forced down the grooves on to the glass. The copper wire being threaded through the wooden bars over the iron ones, is then drawn tight, and the structure becomes quite firm; but the cone is not fixed until all the glass has been inserted in the grooves. Instead of the iron bar being inserted on the last sheet of glass, a wooden one, 2 inches wide, makes a better finish. I have thus a firmly-erected, glass, six-cornered tube, 10 feet in height, and about 3 feet 9 inches in diameter, a light frame, in which four sheets of glass are inserted, forming the door. As there is no draught the heat accumulates to a great extent during the day. In one of these structures with slate at the north side, a thermometer (shaded) marked 99° Fahr.

These vineries are now being made of a conical form, on the same simple principle, when, perhaps, it may be found necessary to give air below. The heat given off from the earth at night, can be retained by having the wooden bars double-grooved and double-glazed, a stratum of motionless air being then enclosed. This extra expense would not exceed £1 10*s*.

The structure which I have endeavoured to describe would cost about £2 2*s*. This, for three Vines, is rather different from the £5 now charged for a ground vinery holding only one Vine, an expenditure never contemplated by the originator, and one which must be a complete obstacle to his system of growing Grapes for the million. I will shortly describe a structure made of indestructible materials, and costing only 14*s*.—A Looker-on.

TOWN SEWAGE.*

The book upon sewage by Mr. Krepp has been laboriously written, contains a description of almost all that has ever been attempted for the disposal of town sewage, and is in reality composed to advocate the system propounded by a Captain Liernur—a plan which in this work is elaborately described and illustrated by various engravings.

It was said of the critic Dennis that he was the fairest of critics, for he industriously pointed out what other poets should do in his reviews, and showed them what they should *not* do by his own poems. This remark well applies to the work before us. We here find an account of the chief sanitary attempts from Deut. xxiii. 13 to the present day—till Mr. Krepp arrives at his climax (p. 205), that "Captain Liernur's Engineering Agency is at 2, Royal Exchange Buildings, London, E.C."

Of that plan, which consists in the separation of human excreta from other sewage and its removal by carriages, it is needless to speak; no local board of health will ever dream of adopting so absurd, so impracticable a process. The far greater number of sanitary schemers forget that the removal of human excreta from populous places is only a portion of the great objects to be obtained by boards of health. Such persons do not consider—1st, that a more copious supply of water, which is in almost all towns required, leads to an increase in the amount of sewage—this must be provided for by sewers; 2nd, that the rainfall must also be conducted into the drains, and this rain water, which is rendered impure by the washings of the streets and houses, must also be provided for—it becomes a weak liquid manure, containing, besides other foreign matters, ammonia, and, in the case of granite-formed ways, a considerable portion of potash. This impure liquid must not be conveyed into the adjoining stream; it can only be sufficiently purified for its admission into a river by being previously employed in irrigation. If, therefore, it were practicable to separate the excreta from the other matters of town sewage, this would not obviate the necessity for sewers. They must still be constructed, and must also be regularly flushed by water. These requirements must all be considered by the sanitary improver. By separating the excreta from the other portions of town sewage as proposed by Captain Liernur, you would add largely to the expense, and add to the discomfort of the inhabitants.

As it has been observed in another place, such sanitary difficulties commence as soon as men begin to dwell in fixed habitations. As long as they live a wandering life they have little need to regard the refuse matters of their families, since they find it easy to often remove their tents to a fresh locality. When, however, men began to congregate, a different state of affairs arose. Of course the most primitive mode of disposing of such refuse matters was by throwing them into the street, a practice that to a very late period was adopted in some of our cities, a plan even yet followed in many of the plague-haunted cities of the East.

After a time, as towns increased in size, this disgusting practice gradually began to be superseded by another bad system. Cesspools were introduced. And now another very injurious sanitary effect was very slowly discovered. These cesspools could only be useful by being constructed in a porous soil, and lined with bricks without cement, so that the sewage daily poured into them from the houses could soak away into the soil. The result was, that the sewage very speedily descended into the earth until it reached the water-bearing stratum, from which the house-well obtained its water. Thus the water used for domestic purposes became tainted, and was in fact only a very diluted filtered sewage. The earth through which that sewage flowed in its way to the well (as was then but very little understood), merely removed the mechanically suspended matter, but not the chemically combined substances of the foul stream.

Then came the period, about a quarter of a century only since, when these facts were vigorously explained to the public at large. Long before this time, however, sewers had been constructed, even as early as the ages of imperial Rome; but they were only partially used by the citizens, were conetructed upon very erroneous principles, and emptied their noxious streams into the adjoining river, such as the Tiber, or the Thames.

Then came the days of the Public Health Act in 1848, when good sanitary principles began to be better understood. Sewers of a better character were then made; the sewage of various towns was completed; the sewage of the district was conducted to a common outfall, and that point was too certain to be at the bank of the adjoining stream. A new and very important difficulty now presented itself: the large mass of sewage thus for the first time collected and poured into the river rendered the stream too noxious to be endured by those dwelling on its banks. Courts of Equity were, therefore, speedily applied to; injunctions were granted, and in consequence boards of health were compelled to try and abate the nuisance. Here other mistakes were speedily made by those who were honestly endeavouring to benefit their fellow-creatures. It was deemed possible to deodorise the sewage before it reached the river. A small flight of schemers soon made their appearance, each with a plausible plan. These comprehended every possible variety of modes—settling tanks, filtering machines, precipitants, deodorisers, and combinations of two or three of these. The fate of these has been uniform: they have been and will be all failures. They neither accomplished the object sought to be obtained, nor, if they had done so, would they have been otherwise than a costly and needless expense to the inhabitants of the sewered districts, to say nothing of the utter waste of fertilising matter which they all involve. Several of these plans were carefully tried at the town of Croydon; but after every effort had been made, recourse was had to the employment of the sewage in irrigation. This plan, first adopted by the Local Board of that town, is now being successfully adopted by other populous places. It possesses the great advantages of being not only effectual, but of more than paying its necessary expenses.

It is, indeed, idle to assert that the use of sewage in grass irrigation is profitless; for when we know that the fields of Edinburgh let for £25 to £30 per acre, that the four hundred acres of sandy land at Mansfield (once let at 2*s*. an acre), have been converted by the Portland family into the richest grass land in Nottinghamshire by watering it with the sewage of Mansfield; when we further learn that the sewage-irrigated alluvial soil of Croydon produces annually at least thirty tons of grass, and that thirty-six acres of land on the London basin clay at Norwood, in the same district, yield a still larger amount of grass, it is useless to deny the fact that the irrigation system is successful and profitable. In adopting that system the error must be carefully avoided of applying the sewage to the land

* "The Sewage Question: Being a General Review of all Systems and Methods. By Frederick C. Krepp." Pp. 205, royal octavo. London, Longmans & Co. 1867.

in insufficient quantities. It is almost only to grass that the application is valuable, and to grass the quantity most successfully employed is annually from 3000 to 5000 tons per acre. The ground, indeed, must always be kept in a state of great moisture; the habits of the grasses must be, as it were, changed; an artificial demand for food must be created in the plant, and constantly supplied, and this is materially interfered with if the soil is allowed to become as dry as in its natural state. We must not forget that when we apply, say, 3000 tons of sewage to our land, this is only equal to a fall of rain of 30 inches, and this is about the actual difference in the rainfall between the western or grass-growing side of our island and the eastern or corn-producing side.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

Amaryllis pardina (Leopard-spotted Amaryllis).—*Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia. "A truly magnificent plant." Native of Peru. Found by Mr. Pearce, Messrs. Veitch's collector. Flowers yellow, densely studded with scarlet spots.—(*Bot. Mag.*, *t.* 5645.)

Bletia Sherrattiana (Sherratt's Bletia).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. "Perhaps the prettiest of the Bletias." Native of New Grenada. Imported by Messrs. Low. Flowers rosy purple; lip striped with yellow.—(*Ibid.*, *t.* 5646.)

Billbergia sphacelata (Withered Billbergia).—*Nat. ord.*, Bromeliaceæ. *Linn.*, Hexandria Monogynia. "Very handsome, conspicuous for its magnificent crown of leaves, each from 4 to 5 feet long." Native of Chili, near Conception, where it is called *Chupon*. Its fruits, sweet and pulpy, are called *Chupones*, and are the delight of the native children. Flowers lilac.—(*Ibid.*, *t.* 5647.)

Stemonacanthus Pearcei (Mr. Pearce's Stemonacanthus).—*Nat. ord.*, Acanthaceæ. *Linn.*, Didynamia Angiospermia. Named after Mr. Pearce, collector for Messrs. Veitch. Native of Bolivia. Flowers scarlet.—(*Ibid.*, *t.* 5648.)

Dendrobium macrophyllum, *var.* Veitchianum (Veitch's Large-leaved Dendrobe).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Native of Java. Found by the late Mr. Lobb, Messrs. Veitch's collector. Flowers greenish yellow; lip streaked with purple.—(*Ibid.*, *t.* 5649.)

Scilla sibirica.—Dark blue.—(*Flore des Serres*, 1677.)

Ranunculuses.—Six varieties.—(*Ibid.*, 1679.)

Crocuses.—*Omer Pacha*, white, purple-edged. *Grand Jaune*, yellow. *Scottish*, white, crimson lines. *Mammoth*, very large, ivory white. *Drap d'Or*, yellow, crimson streaks. *Louis Napoleon*, very large, crimson purple. *Albion*, white, tinged and streaked with crimson. *Le Nuancé*, ivory white, crimson base. *Argus*, white, crimson-feathered. *Mont Blanc*, white. *Beranger*, lilac purple.—(*Ibid.*, 1680-1.)

Single Tulips.—*Junger Gelber Prinz*, yellow. *Jagt van Rotterdam*, white, crimson flakes. *Pottebakker blanc*, white. *Camelcon*, sprinkled with scarlet. *Matelas rose*, crimson, white-edged. *Dorothea*, white, crimson-flaked. *Grootmeester van Malta*, white, crimson-flaked. *Gouden Standard*, yellow, crimson-flaked. *Ville de Haarlem*, white, slightly flaked with purple.—(*Ibid.*, 1682-4.)

Double Tulips.—*Couronne de Roses*, crimson, white-edged. *Gloria Solis*, scarlet, yellow-edged. *Mariage de ma Fille*, white, crimson flakes. *Regina rubrorum*, yellow, crimson flakes. *Rex rubrorum*, deep crimson.—(*Ibid.*, 1685.)

Single Early Tulip.—Flower crimson, white-edged; leaves yellow-edged.—(*Ibid.*, 1687.)

Cattleya citrina (Yellow-flowered Cattleya).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Native of Mexico. Flowers yellow, lip streaked with orange.—(*Ibid.*, 1689.)

Scutellaria costaricana (Scutellaria of Costa Rica).—*Nat. ord.*, Labiatæ. *Linn.*, Didynamia Gymnospermia. Introduced by M. H. Wendland, from Costa Rica, in Mexico, where it grows at an elevation of 6000 feet. Flowers scarlet with orange throat.—(*Ibid.*, 1690.)

Maranta illustris.—Leaves with white zone, purple under-surface.—(*Ibid.*, 1691.)

Magnolia Lennei.—A cross-bred between Yulan and purpurea, and named after the Director-general of the royal gardens of Prussia. Flowers pale rose, edged with white.—(*Ibid.*, 1693.)

Cratægus oxyacantha coccinea flore-pleno (New Double-blossomed Crimson Thorn).—"As a hardy ornamental tree for planting in the shrubbery and flower garden, we loop upon this Thorn as the grandest acquisition that has been obtained for many years; and as a forcing plant it is equally desirable, for the young plants appear to flower freely when only a few inches high. This, indeed, has been sufficiently shown by the examples which have been exhibited by Mr. W. Paul at the Royal Horticultural Garden, South Kensington, and at the Royal Botanic Garden, Regent's Park, several times during the spring of the present year.

"As there has been some doubt created in the mind of the public as to whether there are not two new double Crimson Thorns, issuing from different establishments, under similar names, we are glad to be able to dispel the mystery. We speak advisedly when we say that the plants shown by Mr. William Paul, and the branches shown by Messrs. George Paul & Son, are identical both in leaf and flower. The variety is a sport from the double Pink Thorn, and originated in the beautiful and well-kept garden of Christopher Boyd, Esq., of Cheshunt Street, near Waltham Cross, where it still exists. It has, therefore, never been the exclusive property of any one nurseryman.

"The history of the sport is briefly this: About seven or eight years ago some flowers of this intense hue were observed on a plant of the double Pink Thorn, and on examination it was found that a strong branch had started up from near the centre of the tree, with leaves as well as flowers differing from its parent. The branch was encouraged, and year by year increased in size, retaining the colour and character originally observed. The parent plant is apparently about twenty-five years old, 30 feet high, and as much in diameter, measured from the outermost branches at its greatest width. There is still only one stout central branch of this deep colour; the other branches, which are profusely adorned with flowers, being of the original pale pink so well known to horticulturists. When looking at the tree recently, so great was the contrast between the sport and the original, that we could not rid ourselves of the impression that the parent variety was in this instance paler than usual, and we asked ourselves whether the colouring matter had not been drawn from the larger surface and intensified in this particular branch by one of those secret processes which the student of Nature is often called upon to behold and wonder at, without being able to account for or explain. This may be fanciful, but here is certainly a *lusus naturæ* worthy of the attentive consideration of our vegetable physiologists.

"We do not hesitate to advise every one who has a garden, to purchase this plant at once."—(*Florist and Pomologist*, vi., 117.)

DESTROYING WORMS BY CORROSIVE SUBLIMATE.

Can you inform me the proper quantity of corrosive sublimate per gallon to dissolve in water in order to destroy worms in lawns? I have tried it during the evening on a small piece of grass, and the number of worms it brought out was surprising. The quantity used was about as much as would lie on a sixpence to a six-gallon watering-potful of water. Do you think this is strong enough to injure the grass?—Philip Crowley.

[The quantity of the virulent poison you employed would not injure the grass; but birds or poultry swallowing the worms would be injured or killed. One ounce to fifteen gallons of water is the quantity usually employed. Lime water is as efficacious as the solution of corrosive sublimate, and involves no danger. We are of the number who think it is better to disperse the wormcasts every morning with a broom, than to destroy the worms. We are of opinion that those wormcasts, and the admission of air to the interior of the soil by the holes made by the worms, are very beneficial to the grass.]

NOTES AND GLEANINGS.

We are requested to state that the following error was published in the advertised prize list of the Royal Horticultural Society's Show in our last number. In class 7, for six new Roses not sent out previous to 1864–5, in any sized pots (open), it was announced that Mr. William Paul obtained the first prize; whereas the first prize was awarded to Messrs. Paul & Son, and the second prize to Mr. William Paul. In our reporter's original report his notes were correct, and at the last moment, when he saw the official prize list, he altered his

own report, being unaware that any change in the prize cards had been made. That change was unauthorised and erroneous.

—— The Council of the Royal Horticultural Society, with the consent of the exhibitors, determined to extend the time of keeping open the Great Show to Whit-Monday and Tuesday to allow holiday-folks an opportunity of seeing such a magnificent display, and this concession was taken advantage of by a large number of persons. The attendance of visitors during the Show has been as follows:—Tuesday, June 4th, 5060; Wednesday, 1154; Thursday, 3351; Friday, 3107; Saturday, 1964; Monday, 3826; Tuesday not yet ascertained.

—— According to the "Journal of the Society of Arts," the following prizes were adjudged to gardeners at the final examinations, conducted under the auspices of the Society. The first prizes for Botany and Floriculture, of £5 each, were awarded to Robert Creaser Kingston, aged 20, Richmond Parochial Library and Reading Room, gardener. The second prize of £3 for Floriculture, was allotted to William Pritchard Roberts, aged 27, Bromley Literary Institute, gardener. The first prize for Fruit and Vegetable culture, £5, was adjudged to John Charles Higgs, aged 26, Southampton Athenæum, gardener; and the second prize to George Stanton, aged 26, Slough Mechanics' Institute, gardener. The Royal Horticultural Society's prizes were awarded as follows:—In Botany: first prize, £5, to Robert Creaser Kingston, 20, Richmond Parochial Library and Reading Room, gardener. Second prize, £3, Richard Lee Keenan, 23, Richmond Parochial Library and Reading Room, gardener. No other candidate qualified to receive a prize. In Floriculture: first prize, £5, Robert Creaser Kingston, 20, Richmond Parochial Library and Reading Room, gardener; second prize, £3, William Pritchard Roberts, 27, Bromley Literary Institute, gardener. In Fruit and Vegetable culture: first prize, £5, John Charles Higgs, 26, Southampton Athenæum, gardener; second prize, £3, G. Stanton, 26, Slough Mechanics' Institute, gardener. The "Gardeners' Chronicle" Prize of £3 is awarded to Robert Creaser Kingston, 20, Richmond Parochial Library and Reading Room, gardener.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Prepare ground for planting out Brussels Sprouts, Borecole, Broccoli, Cauliflowers, and Savoys. *Peas*, sow Knight's Marrows; if dry weather continue, the drills for Peas, Kidney Beans, &c., should be rendered moist before sowing, and if the seeds are previously steeped in water for eight or ten hours rapid vegetation will be insured at this period of the season. *Turnips*, take advantage of the first cloudy weather to sow a portion of the main crop of winter Turnips. They should be sown in drills whilst the ground is freshly prepared, placing in the bottom of the drill a compost of rotten dung, in order that roots may be emitted at once, and that the plants may form rough leaves sooner, so as to be out of the reach of the fly.

FRUIT GARDEN.

Particular attention will now be required with regard to wall trees planted last season. In the case of Pear trees it will be desirable that a central shoot be trained upright, and one on each side to form the lower tier; but in order that the latter may acquire greater vigour, they should not yet be brought to a horizontal position. If they appear of equal strength, they should diverge at the same angle, but if unequal the weaker should be allowed the greater elevation. The lowest side shoots of Peach and Nectarine trees should also be encouraged by as much elevation as can be afforded, consistently with the possibility of bringing them to their ultimate position, that of an angle of about 45° for a little distance from their origin, and then nearly horizontal. If the central shoot exhibit too great luxuriance, its point may be inclined to either side; a few of its laterals may yet be permitted, lest by stopping them the lower eyes should break prematurely. Disbud Figs, retaining no more wood than is required for the next season. Be sure to select the short-jointed wood.

FLOWER GARDEN.

Attend to the tying-up herbaceous plants that are tall or showing flower, such as the different kinds of Rockets, Pæonies, double and single Lychnis, &c., in order to prevent their being injured by the wind. Take up Anemone pavonina as soon as the foliage begins to die off, clean the roots, and store them away in an airy cool shed or loft to dry. Collect seed of the Poppy Anemone as it ripens, and sow it at once in a seed-bed; the plants will bloom next season if seed is sown during this month. Dog's-tooth Violets will succeed well if taken up, parted, and replanted as soon as the foliage is matured. Mow lawns often during this growing weather. Hoe and rake borders; remove dead leaves and blossoms, and water any of the recently-planted beds in which plants have not taken sufficient hold of the ground. Verbenas, Petunias, and similar plants should be pegged down where it is requisite to cover the surface of the beds. Fine specimens of Fuchsias may be planted out on lawns, also large Pelargoniums, chiefly of the scarlet kinds, and should be well staked. Ten-week Stocks may yet be sown for a display in September and October, and a little late Mignonette, as also a few of the best annuals for autumn work. Ranunculuses are in bloom in early localities, shade from the powerful rays of the sun, and occasionally water with soft water between the rows. Look sharply after a green caterpillar exactly the colour of the stem. It will generally be found just under the blooms. Pinch off the laterals, and thin the buds of Pinks, in order that those intended for exhibition may increase in size. Water those grown in pots during the evening, and tie with waxed thread the pods of those which are sufficiently advanced. Carnations and Picotees will now require considerable attention, examine the ties and see that no stems are pinched or contracted; continue to fasten others as they elongate; remove laterals, and use every means to encourage robust growth. Pansies for exhibition should have a slight awning over the bed.

GREENHOUSE AND CONSERVATORY.

Now is the time to encourage a rapid and sturdy growth in Corræas, Epacrises, Pimeleas, Chorozemas, Leschenaultias, Polygalas, Ericas, &c. A constant stopping of gross shoots will be necessary, in order to equalise the sap, and encourage the lower part of the plant. Let liberal shifts be given during the season, in order that the pots may be tolerably well filled with roots before the approach of winter, thereby guarding against stagnation in the soil. As a general compost for the most of these tribes, we would recommend three parts of a fibrous heath soil in a lumpy state, and abounding in sharp grit, to one part of a free turfy loam; a good sprinkling of charcoal from the size of a Pea to that of a Broad Bean, with a portion of pounded crocks of similar size, should be added to the mass. It is hardly necessary to urge the necessity of thorough drainage; let it, however, be thorough. Crocks carefully placed to provide outlets for the water, and these again covered with a smaller size of pounded crocks and charcoal, and finally with the roughest part of the compost, to place the ball on, will be found, although apparently troublesome at first, to be by far the least so in the end. This mode of arranging the parts of a compost, as also the drainage, will be found very essential, if not absolutely necessary, where liquid manure is constantly used. Cinerarias done blooming may be cut down, dipped in tobacco water to clear the aphides, and turned out into a raised bed in the kitchen garden or reserve ground; they will produce an abundance of suckers by the end of August, and may then be increased.

STOVE.

The principal work in this house is to attend to the climbing plants; see that they are all properly trained either to stakes or trellises. Some of them may require stopping to cause them to throw out a greater profusion of shoots. The beauty of these useful plants depends much on the training which they receive during the period at which rapid growth is going on; many of them are ruined owing to the want of timely attention in this respect. Keep down the green fly by fumigation, the red spider by syringing, and the mealy bug with the finger and thumb. The thrips, one of the worst of enemies to gardeners, may be subdued by constant smoking, and occasionally syringing with lime and soot water in a perfectly clear state; but this, and all other insects, when once they make their appearance, must be followed up in right earnest until they are completely destroyed. Where a great amount of heat is indulged in to promote the rapid growth of Orchids, some of the Guatemala kinds, the Lælias, and those from cool and mountainous regions, should be separated, if possible, from the main stock. A vinery in which a trifling amount of heat is kept up would do. Abundance of moisture in the atmosphere must, however, be provided.

PITS AND FRAMES.

Put in cuttings of the most choice kinds of Phloxes or other herbaceous plants, in order that they may be rooted before the frames are again required for autumn cuttings. Shade during the day, sprinkle and shut up early in the afternoon.

FORCING-PIT.

The young stock of Gardenias are the chief occupants here,

and now begins the propagation by grafting of Camellias, Rhododendrons, and Azaleas; when expedition is preferred, these may be kept in a strong, moist, and close heat till they are united, but they will do perfectly well in a close cold frame, well shaded, only they take longer time in this way.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The routine has been very much the same as last week—hoeing, planting, and taking means to forward crops that were injured by the frost. Pricked out plenty of *Celery*, and fully exposed what will be the first crops, as we have not yet manure at hand to plant in the trenches, or, rather, three-rowed beds, but we shall be able to attend to that presently. One advantage of planting large plants with good balls is, that the base of the plant can be examined, and everything like subsidiary shoots or suckers removed before final planting. When the plants are turned out young this dressing must, in a great measure, be done after they have grown in their allotted places, and with much more trouble than at planting-time. Large plants with good balls can be moved without the necessity of taking away a leaf, except with these axillary shoots or suckers. Although in very sunny weather the plants may require an extra sprinkling overhead, this, even, will not be necessary if they can have the flickering shade of staked rows of Peas between the beds.

Cauliflowers that were brought forward under hand-lights, and a good portion of which still remains, were finally banked up by digging a trench between the rows where the glasses were, and then for keeping them moist enough at the roots they were well banked up with short grass. They are much benefited by this mulching, especially when on a bank sloping to the south. Looked after succession crops, pricked out seedlings, and sowed for the last crops out of doors. We have had good returns by sowing in the beginning of July in patches, and allowing the plants to remain without transplanting; but the middle of June is late enough when they are to be transplanted. In small gardens there must be frequent sowings of everything to keep up a supply and have nothing to run to waste. Until the last sowing of Turnips it is advisable only to sow a small space at a time, and then the crop is always young, sweet, and tender.

Cucumbers.—Regulated those on a ridge intended for Gherkins, &c., also Vegetable Marrows. Banked up the linings of those in frames by placing short grass and a little litter above it, pretty well as high as the frames. The linings, properly speaking, have never been meddled with. The beds were made so much wider than the frames at first as to admit of this banking-up above the level of the bed, as it were, and thus heat is thrown in by forcing the wood to be a conductor, and there is no danger of too much bottom heat. These frames are so shallow that the soil inside is below their lower edges, except where some is beaten firm all round the insides to prevent any access of deleterious steam.

When such material as that referred to above is used for banking-up, care must be taken in giving air, to prop up the sashes, instead of sliding them up or down. The propping-up system is always the best in every way, and should always be adopted where there are linings of fermenting material. The fumes from rank dung will destroy a bed of Cucumbers as effectually as burning sulphur among them would do.

As soon as we can, we will take the soil from a bed that did good service for early Potatoes, remove a foot or more of the upper tree leaves, &c., mix dung from stables and short grass with the lower layer, replace that taken off, as well as the old soil, add a quantity of fresh, put frames on, and plant with strong Cucumber plants for succession, either to ease or take the place of those bearing freely as yet. There are so many casualties that may come, that it is best to be ready.

Cucumber Disease.—This either in its gummy secretion, or curled or spotted leaf, we are as yet free from; but in answer to many inquiries, we must say that we neither know what brings these evils, nor what will keep them away, as we had them for several years, and under every imaginable condition—in pits heated by hot water, in dung-beds, on ridges, in the open ground, it mattered not where, in what soil, or in what temperature. We even sowed in warm places out of doors, in the Sandy fashion, but it was of no avail; by the time the plants began to be useful they showed signs of the disease, and our only partial remedy was frequent sowing, using seed from a distance, and fresh soil each time. Now, we mention this prominently here that it may attract the attention of all who have suffered, particularly of any one who has discovered a remedy, and more especially because one of the best Cucumber-growers in the country, whose house, pits, and frames, used to be remarkable for the fertility and health of the plants, and who never had anything of the sort before in a long practice, has it now among all his Cucumbers, and he says he feels powerless to arrest its progress. Like ourselves, he is not aware of any difference as to treatment, soil, &c., and we had worked at least a quarter of a century among Cucumbers without ever having anything to do with such troublesome pests. At present we would venture to state, that the gardener who is thus troubled is to be pitied rather than blamed. We know there are many who make light of all this, but if they only once have a visit of the enemy, as our friend referred to has, they will find it too serious to make sport of. Who will make known a remedy for this evil?

Potatoes Diseased.—It is only right to mention another evil, as to the cause of which we are forced to confess our ignorance. This season early crops in pots and in frames have been very good. We mentioned planting a wide earth pit, with just a little heat at bottom, heat given by tree leaves, &c., not higher than 80° when highest, the heat in the soil ranging from 50° and a little more when highest; soil a rather light sandy loam. The Potatoes had been set on leaf mould in shallow boxes, and were sprung about 3 inches when planted. The rows were 18 inches apart, and there was nothing between them. Up to May nothing could look better, stems thick and sturdy, foliage of a dark green, and on examining them with the fingers several times the young Potatoes were found coming all right. All at once, after a thunderstorm followed by some days of bright sunshine, the tops showed signs of distress. On examining the soil we found it was in a healthy state, neither wet nor dry; but to keep the plants in a healthy growing state we gave them a slight watering, which revived them until the next fierce sun, when many of the tops flagged again. On examining more closely those that flagged, we found that a little below the surface of the ground the underground main stem was a mass of rottenness, and on these the young tubers progressed no more. On taking up what was thus, contrary to our expectations, a scanty crop, the soil if anything was dry, sweet, and friable, just the very opposite condition to that which would encourage rottenness. On many of the stouter stems thus decayed below the ground, there had been an attempt to throw out fresh roots and runners near the surface. The Potatoes taken from plants that escaped this infliction were good, clean specimens. Another puzzling circumstance is, that one end of the bed is still perfectly healthy, and is well supplied with good tubers, though treated in every way exactly as the rest, with these differences—This part was planted a fortnight or three weeks later, and whilst the earlier part consisted chiefly of varieties of the Ashleaf, the second, and as yet sound part, consisted chiefly of Early Frame and Prince of Wales. The latter was merely tried and promises well, though the stems are rather luxuriant for this system of early growth. The sets of the Prince of Wales were not home-saved. On some of the decayed stems we found a few small worms, &c., but, as it appeared to us, they came as the result and not as the cause of decomposition. There was no appearance of fungus of any kind—in fact, that was partly guarded against by mixing a little quicklime with the soil and forking it over several times before planting. Before this giving way of the underground stems no plantation could have looked more robust and healthy, for they had plenty of air except in very cold weather. Who will help us to account for a lot of the earliest planted thus suffering, and the later planted escaping under precisely similar circumstances in other respects? Have any of our readers noticed similar manifestations? Fortunately, though our general crops of Potatoes out of doors suffered a little from the frosts, those at the foot of walls escaped and are tubering well.

Proceeded with thinning Carrots, Parsnips, and Onions, hoeing the ground at the same time; the thinnings of the Onions, put in thickly, will do for salading and for forming small buttons. Carrots sown now will yield rich sweet pullings in autumn. Planted out Beet, as for years we have found it folly to sow, as it would require fine netting to keep the birds from it just as it comes through the ground. They are quite as destructive to the coloured young leaves of Prince's Feather and Love-lies-bleeding; but once the leaves have grown a little they cease to meddle with them.

FRUIT DEPARTMENT.

Nipping, thinning, watering, looking after insects, as detailed in previous weeks' notices. Nipped the stronger forcright

shoots from Pears, Apples, Plums, &c., so as to give more light to the smaller stubby sheets, and were careful not to overdo this nipping just yet, that there might be no inducement to these stubby spurs to elongate into shoots. By thus carefully summer-nipping our dwarf trees there will be no lack of fruit-buds, if the roots are in good condition, and the trees are kept compact and near home.

Melons.—"Frutex" wants to know if he cannot grow Melons in a cold frame after the middle of June, and also how best to manage the training and pruning in the simplest way. To the first we say, Yes. We have had good crops merely with a frame over them and no bottom heat, but taking care to secure all the heat possible from the sun, by shutting up closely early in the afternoon, and covering the glass in cold nights. The crop will be all the more sure if there be, beneath the centre of each light, two or three barrowloads of hot dung, on which the soil must be placed and firmly trodden. If it can be managed, the plants will do as well if the roots be confined to from 2 to 3 feet in width of soil, as over-luxuriance is thus avoided. The soil, however, should be 18 inches deep. We shall describe the simplest mode of cultivation, and the easiest to a beginner. Supposing, then, the lights to be 4 feet in width, and 5½ or 6 feet in length, we would recommend three plants to a light, each plant pretty well established in a separate pot previously. This will be better than sowing the seed where the plant is to grow; but however obtained, as soon as the plants are 3 or 4 inches or so in height nip the point out. Of the shoots that come from the axils of the leaves select two, as equal in strength as possible. Plant carefully, and train one of these shoots to the back and the other to the front of the frame, and do not stop them until they each are fully 2 feet long, but nip out the side shoots that come from the axils of the leaves as the shoots grow. When you do stop, leave three or four joints, which will be close together when you nip out the terminal bud. These joints will grow farther apart as the shoot lengthens; and from the axils of the leaves at the joints a shoot will come, which may be expected to show fruit, and should be stopped a joint above the fruit, and, if too much fruit set, you can thin out as you like. If this side shoot do not show fruit at the first joint wait until the second come; and if that do not, stop to cause the production of a fourth side shoot. Now, by this simple means you will have six main shoots from your three plants; the disbudding of these six shoots secures fine foliage without crowding with smaller shoots; and if from one main shoot you can manage to set and swell only one fruit, that will give you six fruit to the light, and so on in proportion to the number you would like, or the size of the Melon, bearing in mind that if a moderate number is taken the fruit will generally be better, heavier for its size, and richer in flavour. Remember, too, that whatever number of fruit you take from a plant, you must induce them to set, and begin to swell at once and together; for if only one fruit swell on a plant it is difficult to get any more to set and swell.

This is one of the reasons why we recommend the three plants to a light, and planted in the centre at regular distances, as it is easier to set two and four fruit on a plant at the same time than six or a dozen. The mode of disbudding the first side shoots and only leaving those at the point to come, secures strength of plant before the fruit shows, and renders much other pruning unnecessary. For many years we acted strictly on this simple plan, suggested by a careful study of the growth and nature of the plant, and with great general success. From press of other matters we have not been always able to see the plan simply carried out, but we have met with no other plan so good and so successful at a minimum of trouble and labour. Of course, when one plant is designed to occupy a large space, four, six, or more shoots must be obtained after the first stopping, and the more regular these shoots are in strength the more equally will the fruit be distributed and set. The three plants will be the simplest for the inexperienced. The simplicity will be a little increased if one plant have the two secondary shoots trained to the back, and the next plant have the two shoots trained to the front. Each plant will then be wholly in one position as respects light, temperature, &c., and the setting of different fruit at one time will be, if anything, easier.

We trust it will thus be seen that the primary shoot of the Melon is that which comes at once from the seed, the main stem as it may be called. The secondary shoots are those selected that come after the pinching-out the point of the main stem. These are what we recommend to train over the bed, disbudding the tertiary shoots that come from them nearest the stem; and the tertiary bearing shoots are those we allow to come from near the stopped point of these secondary shoots, and which tertiary shoots we stop again at the joint above the fruit.

ORNAMENTAL DEPARTMENT.

Some of the walks not pleasing us we ran the hoe over them when damp, and raked them level on a sunny day. The weather compelled us to mow, and was too wet to permit us to proceed with flower-bed planting; but if it continue fine, the most will be done before this is printed. Not wishing to repeat what has recently been said, we would refer to last week's notices for what is more important even than early planting. Looked after bulbs, Pinks, &c., and commenced propagating the latter.—R. F.

COVENT GARDEN MARKET.—June 12.

Under the influence of this sunny weather supplies are greatly improved both in quantity and quality, and a marked increase in Continental imports is observable; they now comprises Peaches, Nectarines, Melons, Figs, Apricots, and Cherries. Of home-grown Pines and Grapes there is an abundance, with a good sprinkling of Peaches and Nectarines, and a large quantity of open-air Strawberries. Potato trade dull at former prices, and unfortunately much disease is already making its appearance.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	3	0 to	4	0	Melons	each	5	0 to	8	0
Apricots	doz	3	0	4	0	Nectarines	doz.	10	0	18	0
Cherries	box	2	0	3	0	Oranges	100	5	0	10	0
Chestnuts	bush.	0	0	0	0	Peaches	doz.	15	0	36	0
Currants	½ sieve	0	0	0	0	Pears (dessert)	doz.	0	0	0	0
Black	do.	0	0	0	0	kitchen	doz.	0	0	0	0
Figs	doz.	6	0	10	0	Pine Apples	lb.	5	0	8	0
Filberts	lb.	0	0	0	0	Plums	½ sieve	0	0	0	0
Cobs	lb.	0	9	1	6	Quinces	doz.	0	0	0	0
Gooseberries	quart	0	4	0	6	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	5	0	10	0	Strawberries	lb.	1	0	4	0
Lemons	100	5	0	10	0	Walnuts	bush.	10	0	20	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes	each	0	6 to	0	8	Leeks	bunch	0	3 to	0	4
Asparagus	bundle	3	0	6	0	Lettuce	per score	1	0	2	0
Beans, Kidney, per 100		1	0	2	0	Mushrooms	pottle	1	6	2	0
Scarlet Run.	½ sieve	0	0	0	0	Mustd. & Cress, punnet		0	2	0	0
Beet, Red	doz.	2	0	3	0	Onions	per bushel	4	0	5	0
Broccoli	bundle	2	0	3	0	Parsley	per sieve	3	0	4	0
Brns. Sprouts	½ sieve	0	0	0	0	Parsnips	doz.	0	9	1	0
Cabbage	doz.	1	0	1	6	Peas	per quart	0	9	1	6
Capsicums	100	2	0	3	0	Potatoes	bushel	4	0	6	0
Carrots	bunch	0	6	0	8	Kidney	do.	5	0	6	0
Cauliflower	doz.	3	0	6	0	New	lb.	0	3	0	0
Celery	bundle	1	0	2	0	Radishes	doz. bunches	0	9	1	0
Cucumbers	each	0	6	1	4	Rhubarb	bundle	0	4	0	0
pickling	doz.	0	0	0	0	Savoys	doz.	0	0	0	0
Endive	doz.	2	0	0	0	Sea-kale	basket	0	0	0	0
Fennel	bunch	0	3	0	0	Shallots	lb.	0	8	0	0
Garlic	lb.	0	8	1	0	Spinach	bushel	2	0	3	0
Herbs	bunch	0	3	0	0	Tomatoes	per doz.	3	0	4	0
Horseradish	bundle	2	6	4	0	Turnips	bunch	0	6	0	0

TRADE CATALOGUE RECEIVED.

A. Barnaart, Vogelenzang, Haarlem, Holland.—*Catalogue of Dutch Flower Roots.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

Hospital (*A Young Gardener*).—There is a hospital specially devoted to diseases of the heart, at 67, Margaret Street, Cavendish Square. Without medical advice we know persons who have had heart-disease for twenty years, and are still alive. Physicians of greatest eminence merely advised temperate living and avoidance of violent exertion.

Seedling Cinerarias and Calceolarias (*R. D.*).—The flowers were punched flat and dry. Flowers, and indeed all specimens of plants, should be sent in damp moss in a box.

Fungus in Bark Bed of Stove (*Linda*).—The name of the fungus is Agaricus (Lepiota) clypeolarius, a British species, not uncommon in hothouses. It is not a recognised eatable species, and we cannot recommend any means for preventing its recurrence without injuring the tan; it will probably soon disappear of its own accord. You, or any one, would oblige us by sending three or four fresh specimens, in an old seidlitz-powder box (with a bit of wet moss), to Mr. W. G. Smith, 12, North Grove West, Mildmay Park, London, who is making a collection of drawings of Fungi.

Viola cornuta (*Brockfield*).—They are correct blooms as far as we can make out in their shrivelled state. Flowers should be enveloped by damp moss in a box for travelling.

Draining a Clayey Soil (*Sigma*).—We know the soil in your garden at Pengo, and recommend you to have drain pipes laid at 2½ feet from the surface, and the drains to be not more than 12 or 15 feet apart.

Wireworms in Vine Border (*Constant Reader, Glasgow*).—If your Vine border is so much infested with wireworms, we fear that nothing will do except removing the soil and fresh planting. Before resorting to this, however, stick pieces of Potatoes, Radishes, Carrots, Turnips, or any thing of that kind, all over the border, just deep enough to be out of sight, and go and examine them every morning, and do what you think best with the wireworms which you find. Make also holes where there are no roots, and put gas tar in the holes.

Thinning the Fruit of Orchard-house Peach and Nectarine Trees—Fruit Eaten by Woodlice (*Royal George*).—We would thin the fruit of your Royal George Peach tree to two dozen, and they will give you more satisfaction than six dozen. We have had more than three dozen from such a tree. We would thin at once. Timely thinning is the best means of preventing fruit dropping when stoning. To keep woodlice from going up the stems of your pot trees, tie a little clean wadding firmly round the stem, and over that wadding dipped in a mixture of oil and coal tar. Once we were greatly troubled with them on Cucumber plants in pots. They nipped the points of every young fruit. We had circular vessels made of tin or zinc, 1 inch wide and 1 inch deep, long enough either to go round the stem or round the inside rim of the pot when set firmly on the soil, and then the one-inch space was partly filled with tar and oil. The vessel must not be much less than an inch in width, or the woodlice will stretch over it.

Thrips on Vine Leaves (*E. D. S.*).—We found a few remains of thrips on the Vine leaves, and the remedy is tobacco-smoking and severe syringing afterwards. The leaves also had this peculiarity, that the leaflets seemed to come double, one over the other, and that, we presume, was the result of over-luxuriance, and a close, moist atmosphere.

Leaf Mould (*Andover*).—The leaves should be laid in a heap, not very thickly, and, being left until autumn, they will have decomposed sufficiently to be used for mixing with soil as compost for plants. If turned over now, and again in autumn, they will decompose more rapidly, and still more speedily if you mix a little loam with them at each turning. Leaves at the end of twelve months are usually sufficiently decomposed for potting-purposes, but they are not thoroughly so until the second year. For bedding plants the compost should consist of two-thirds loam and one-third leaf mould. Leaf mould is too open, and becomes too close and saturated, owing to the frequent waterings, to be employed alone.

Pampas Grass Killed by Frost (*Idem*).—The Pampas Grass with us is not killed, but is much injured. The old plants have suffered most. It is owing to the last exceptionally severe winter that so many are killed or injured, otherwise this beautiful Grass is sufficiently hardy to endure our ordinary winters.

Definition of Zonal and Nosegay Pelargoniums (*Idem*).—The name of Zonal was given a few years ago to that particular section of Pelargoniums to distinguish it from others. They were all called "Scarlet Geraniums," which did not truly express what was meant, as there are so many shades of colour in the flowers of that class, and it would be absolutely incorrect so to call Madame Vaucher, which has a pure white flower. Almost the whole of this family have a zone on the leaf, though sometimes faintly developed, hence the old-fashioned name of "Horseshoe" Geranium. The word "Zonal" at once conveys to the mind the particular section of Pelargoniums of which we may be speaking. A Nosegay Pelargonium is a Zonal in every sense of the word, the leaves are generally marked with a zone: and then a Nosegay differs only from other Zonals in the form of its flowers, the petals of which are narrow and long, and the three front petals wide apart from the two at back; the trusses are much larger than the usual size, and are more enduring under rain or hot weather. Nosegay Stella and the variety called Punch, or Tom Thumb, are respectively good examples of a Nosegay and the large-flowering Zonals.

Melon Plants Dying Off (*A. A. N. H.*).—The leaves sent have every appearance of suffering severely from mildew. Your only remedy is to syringe the plants and dust the leaves and stems on both sides with flowers of sulphur. The contact of the sulphur with the fungus, and the fumes that will be emitted whenever the sun shines powerfully upon the house will destroy the mildew; but if your plants are so much affected as it would appear from the leaves sent, we fear they are beyond cure, and that your best plan will be to replant. Melons like a strong unctuous loam if it contain grit, but we never found chalky soil or lime rubbish of any benefit in Melon culture.

Camellias Unhealthy (*Oxonian*).—We fear we cannot help you, for your plants appear to be in a very bad condition, and have been so for some time. We advise your shaking them out of the pots, removing all the soil, for that appears to us to contain something injurious to the roots, and potting them afresh. Use turf from a pasture where the soil is a good rather light or sandy loam, paring it off from 1 inch to 1½ inch thick, and tear it in pieces with the hand, and work it in among the roots. Pot rather firmly, afford good drainage, and do not bury the collar of the plant too deeply, in fact, it should be level with the rim of the pot. The plants after potting should be placed in a house with a moderate temperature, in a cool vinery for instance, and be moderately supplied with water, but always give enough to show itself at the drainage. They should have a good syringing every evening, and the atmosphere must be kept moist. Air should be given moderately, and if the plants are in a house where there are no Vines, slight shade should be afforded when the sun is powerful. We would not cut back the shoots, but if very close together we recommend thinning out the weak wood. All, or nearly all the flower-buds should be removed. If you treat your plants as above recommended they may recover, and in a year or two become healthy. Do not attempt to force them into second growth, but first secure a healthy root-action. You may continue the plants in a vinery until August.

Amaranthus melancholicus ruber Culture (*A Subscriber*).—The plant, of which you sent us a seedling in the rough leaf, is that named above, and should now have been 6 inches high and in the course of being planted out. The seedlings should be potted off singly in 60-sized pots, or three in a 48-pot, when in the condition of that sent us, and be continued in a frame with a gentle heat, such as that of a hotbed used for cuttings and seeds, shifting them into pots a size larger when those they were first potted in are filled with roots. Use a compost of rich turfy loam and leaf mould, with a free admixture of sand. The plants should be kept moist, and be slightly shaded after potting until established; but when they have recovered from the potting, air should be given freely. The seed should be sown at the end of March, or early in April, in a hotbed, and the plants potted off and grown on in heat until the beginning of June; they should be hardened off and planted out in the second week in the month.

Vine Leaf Scorched (*J. Banister*).—The discoloration of the leaf appears to be caused by its being scorched, probably through the sun shining powerfully on the glass whilst the leaves were wet; or it might be caused by water being poured upon a hot flue or pipe. A little air given early in the morning will prevent the first danger; in fact, the scorching of Vine leaves is chiefly attributable to not giving air before the sun acts powerfully upon the house. The brown or small black insects upon the leaves may be thrips, and there are traces of their having infested the leaf sent us. If you find them at work upon the leaves, keep the foliage of the Vines dry on a calm evening, and, shutting the house up close, fill it with tobacco smoke, and repeat the fumigation on the next night but one.

Bulbs after Flowering (*Auvergne*).—When the foliage begins to decay the roots should be taken up, and be placed thinly on a shelf in a cool airy shed to dry. When the stalks part freely from the bulbs they should be removed, and the bulbs stored thinly on shelves in dry sand. They will keep sound and plump until autumn, and then the loose scales and old roots may be removed.

Melons Diseased (*H. Buckmaster*).—The leaf sent is much rusted, and the evil will only disappear by syringing the plants overhead, and dusting the leaves on both sides with flowers of sulphur. This should be done early in the afternoon; the frame should then be shut up closely, and a mat be thrown over the glass if the sun is powerful. Do not practise the syringings with Gishurst, and tobacco fumigations are of no use. The cause of the evil is an unhealthy plant. The plants are very weak, and look as if they wanted air.

Rhododendrons Injured by Frost (*A Constant Reader*).—We would not cut off the shoots that were injured by the frosts of May, but leave them for a time, and in a week or two remove any of the dead parts, and these only.

Trees and Shrubs at an Elevation of 1000 Feet (*B.*).—If you were to state your locality, and the names of the shrubs (if any), or what is the vegetation of the locality, we might be able to advise.

Canada West (*Roland*).—The Pansy grows and flowers abundantly in Canada, and plenty of varieties may there be obtained. You might however, take over English-saved seed. We are not acquainted with any work on the climate of Upper Canada, but if you apply to the Commissioners of Emigration, 8, Park Street, Westminster, you will be furnished with reliable information as to the comparative advantages of different parts of the country.

Flowers for a Grave (*Margaret*).—We know Rhyl churchyard, and we think that if the grave was carpeted over with Stonecrop (Sedum acre), and studded with double purple Violets, they would thrive and be suitable.

Pelargoniums for Exhibition (*W. H. M.*).—*Zonals:* Clipper, Engénie Mézard, Monsieur Barré, and Madame Vaucher. *Variegated*, not being Tricolors: Queen of Queens, Alma, Golden Chain, and Golden Fleece. *Tricolors:* Mrs. Pollock, Sunset, Sophia Dumaresque, and Italia Unita.

Names of Plants (*H. W. E.*).—Cystopteris fragilis. (*W. W. B.*).—1, Lastrea dilatata; 2, Asplenium adiantum nigrum; 3, Lastrea sp.; 4, Asplenium trichomanes; 5, Lomaria spicant; 6, Lithospermum fruticosum. (*G. Brown*).—It is an impossibility to name seedlings. (*J. C.*).—Selaginella Martensii (1-2). (*B. Rose*)—1, Crataegus oxyacantha plena; 2, Saxifraga aizoon; 3, Helleborus viridis; 4, Vaccinium vitis-idæa; 5, (bad state); 6, Polemonium cæruleum. (*E. S. B. G.*).—1-2, Saxifraga cæspitosa, vars.; 3, Stellaria holostea. (*W. R.*).—Phlomis macrophylla.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 11th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 5	29.848	29.737	62	51	54	54	S.W.	.24	Densely clouded and rather boisterous; rain; cloudy.
Thurs. 6	29.750	29.665	68	48	56	54	S.W.	.02	Cloudy; fine; cloudy at night.
Fri. .. 7	29.830	29.662	68	44	57	56	S.W.	.10	Low white clouds; fine; overcast.
Sat. .. 8	30.037	29.987	72	47	57	56	S.W.	.00	Fine; cloudy and fine: overcast at night.
Sun... 9	30.198	30.066	75	43	57	56	W.	.00	Very fine; fine with clouds; very fine.
Mon... 10	30.242	30.227	80	45	57	56	W.	.00	Exceedingly fine; very fine throughout.
Tues. . 11	30.268	30.110	82	50	59	57	S.	.00	Very hot and cloudless; very fine at night.
Mean	30.022	29.922	72.43	46.86	56.71	55.57	..	0.36	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GUARANTEEING HIGH-PRICED EGGS.

As there is considerable discussion about the quality of high-priced eggs just now, perhaps the experience of one of your subscribers may be useful. Of purchased eggs I have tried three sittings simultaneously: one Dark Brahma, one Black Spanish, one Black Duck of a foreign variety. The first sitting cost quite £1, for there was carriage to pay and a man's time in going to the station on three consecutive days, in addition to the high price for the eggs. The result was six chickens hatched, with which I was satisfied. The Spanish eggs I acquired by exchange from one who guaranteed the *bona fides* of one of your advertisers a short time ago. He stated that he was quite satisfied with his part of the agreement, made according to his own terms, and I in return asked him to guarantee me four chicks, and to be sure and send the eggs fresh. I received them on a Friday evening, and set them the following Tuesday morning; the result was only one chick saved out of three hatched. I wrote about it, and was promised, as all appeared fair and aboveboard, a few others, which I have never received. Of the Black Ducks, nine were hatched out of thirteen—a very good result; but they have never been advertised to my knowledge. I supplied five eggs of the Silver-spangled variety to a friend, and they were all hatched in nineteen days, or two days previous to the expected time; and as I had some Sebright eggs, which I offered for sale but did not part with, I set the layer herself on nine, and she hatched the whole of them, coming off with a strong brood on the morning of the twentieth day. I did not select the eggs, but took them in the order of their being laid.

All the three sittings which I purchased I set under first-class Dorkings exactly under the same circumstances, so there was no excuse in any way, the hens being well cared for and looked after. It is useless to talk of eggs being fresh when they do not hatch to time, for that is the great test. Of the three Spanish chicks, the first two were so weak that they did not survive the hatching, the third was so weak in the shell that to strengthen it I gave it raw egg, which helped it through.

These remarks, I am sure, will do good to all those who advertise eggs, if they will guarantee what they ask a high price for, and these continued disappointments are only prejudicial to their best interests. The Spanish eggs, I should state, cost with carriage expenses 16*s*.—Veritas.

GAPES IN CHICKENS.

The above disease seems in consequence of the cold wet weather, to be more than usually prevalent this year amongst Dorkings and other delicate breeds; and as I heard a short time ago of a remedy which appears to have been singularly successful, I have thought it might be of service to give it publicity.

It was furnished me by a friend who is breeding Dorkings this season from some of the best stock in England. His chickens having suffered severely from gapes, the following prescription was given to him as an unfailing cure, by a gamekeeper who has had the rearing of 1500 head of Pheasants per annum, and the very first results were so promising that I had thought of publishing them a fortnight ago, but have purposely delayed till they should be confirmed by subsequent experience. This, also, being satisfactory, I trust you may find room for the prescription, as follows:—Bol. Armen. 20 grs.; spirits of tar, 12 drops; cochineal, 1 oz. To be divided into pills the size of a peppercorn, and given on the first symptoms appearing, or one pill as a preventive to all chickens, where the disease has prevailed, about the sixth day after hatching. It may be as well to remark, that, as a preventive, the medicine must be used with caution, as it is a violent purgative.

I have not hitherto had much faith in internal remedies for this disease, but the following results have induced a change of opinion:—

1, A chick apparently dead from gapes, showing some slight signs of animation under warmth, was given a dose. Next morning it could stand, and was given another pill. It lived through the day, and my friend believes would have recovered, but having to leave in pursuit of his business avocations no further medicine beyond the second dose was given, and the chick died.

2, Another chick not so far gone, but very badly infected, recovered.

3, Whilst one or two chickens were lost daily previous to the trial of this medicine, none have died where it has been given.

I shall be glad if any of your readers who may try the above remedy will state their experience of its success. I make no claim to originality, I simply give the remedy as written for me by my friend referred to. It is new to me, and I publish it, but if any one else shall say that it is as old as Adam, I shall not deny it, only if it is effective let it be tried.

I will only add, for the sake of novices in poultry-keeping (old hands do not need it), that the best means of preventing any disposition to gapes are, to keep the chickens clean and dry, and to give them clear spring water, putting in the fountain each time it is filled a lump of camphor and sulphate of iron the size of a small pea. All chickens are much benefited by this in cold weather.—Nemo.

EXTENSIVE POULTRY-KEEPING.

In reply to your correspondent "Toby," I may remark that my experience as a poultry-keeper on a large scale is greatly at variance with his statements. I keep almost 2,000 fowls for eggs, and I have never been able to obtain much more than half the number of eggs per head which he does, and the quantity of food consumed is very much more.

As my fowls are nearly all common cross-bred birds, I should have attributed my ill-success to that cause if I had not carefully analysed "Toby's" estimate for 10,000 hens. He puts the cost of corn for that number at £2000. This sum would buy say 1335 quarters of barley or damaged wheat, weighing 50 lbs. per bushel, at 30*s*. per quarter, which is 5*s*. or 6*s*. below the present price, and the weight would be 238 tons 7 cwts. He allows £50 for flesh, which at £10 per ton gives 5 tons. This weight of food is to produce 2,000,000 eggs, which ought to weigh 2 ozs. each, or 111 tons 12 cwts.; thus, about 2 tons 3 cwts. of food is supposed to produce *one ton* of eggs. I leave your readers to judge whether it is probable Hamburghs or any other poultry will ever accomplish that feat. If it could be done, the profit at the present prices of eggs would be over 100 per cent.

A business of the kind proposed might, with a suitable soil and situation, and an energetic manager accustomed to the charge of large numbers of poultry, be carried on at a profit, otherwise it would be a decided failure.—George Chambers, *Standon, Herts.*

"STANDARD OF EXCELLENCE."

I am much surprised to observe it stated, that the "Standard of Excellence" is appended to a poultry book by permission of the Poultry Club. This to me looks very like disposing of the Club's "stock-in-trade," and for considerations, I, as a member of the Club, know not of.

The only return the members of the Club have received for a number of years' subscription has been the "Standard," and it now has apparently been handed over to others, who will thus receive the benefit of that which it has taken the Club years to produce. If the consideration for publishing the "Standard" is to be handed over in prizes at a Show, it will certainly be at a very distant date, as after the experience of Rochdale, notwithstanding the excuses made for that gigantic failure, few members will contribute to a certain prospect of a similar result.—Reform.

PREVENTING HENS SITTING.

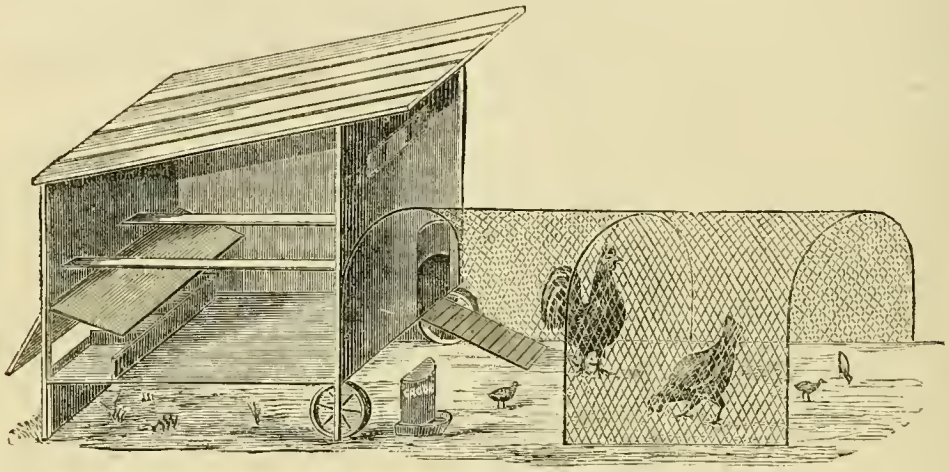
In your answer to "Kitty," you seem to think it a difficult task to prevent a Cochin hen sitting. I have found it so until this year, when I tried the plan recommended by the Hon. Mrs. Arbuthnot with great success.

It is as follows: Let the hen sit three or four days in the nest she chooses; then place her in a yard, or anywhere where there is no nest, and feed well; in four or five days she may be returned to her own yard, and in about a fortnight will lay again.—Philip Crowley.

The Prize Schedule of the Long Sutton and South Lincolnshire Poultry, Pigeon, and Rabbit Show manifests a very great advance on any of the three previous shows. In

each of the fifty-seven general classes prizes to the amount of £1 and 10s. will be awarded, old birds and chickens of each variety being appointed separate classes. Silver cups of the value of five guineas each will be given respectively for the best pen of Dorkings, Cochins, Brahmas, Spanish, Hamburghs, Game, Game Bantams, Bantams, and also for the best pen of Any other variety of fowls. In Pigeons, besides £1 and 10s. prizes for the respective classes, three five-guinea cups will be given for the best pen of Carriers, Tumblers, and the best pen of Any other variety of Pigeons. Besides those named there is a number of local prizes confined to residents only, and to these also, besides the money prizes, three five-guinea cups will be given. With so tempting and liberal a prize schedule there can be little doubt of a complete success being insured; and the Committee announce as the Arbitrators the well-known names of Messrs. Hewitt and Teebay. The Show will be held on October 9th and 10th, the entries closing on Saturday, September 28th, after which date no post entries will be received.

PORTABLE POULTRY-HOUSES.



While portable fowl-houses are occupying public attention, allow us to particularise one of those we advertise for sale. It is exceedingly portable, as light as possible consistent with durability, and very economical of space, besides possessing excellent interior arrangements for the comfort of the fowls for roosting, laying, &c. The nests are so arranged that any lady can collect the eggs without going inside the house. The open space under the house affords ample retreat for the inmates on wet days. The whole being mounted upon wheels, and provided with side fall-down lever handles, it can readily be moved about, and these houses represent one of the most useful improvements in poultry arrangements.

They are equally adapted to either garden or farming purposes, the land becoming enriched and cleared from insects at a small cost with benefit to both proprietor and fowls.—E. & F. Crook, 5, *Carnaby Street*.

INCUBATORS.

Your correspondent, "Brown Red," seeks for information relative to machines for hatching eggs, and suggests that you should undertake the task of testing the merits of rival incubators. Now, Messrs. Editors, I give you credit (and, indeed, editors generally), for having a vast amount of patience; but I think a trial of incubators would quite exhaust your stock of that virtue, as we are told it is, and a very great virtue it must be when exercised in relation to hatching eggs by the machines at present invented. To say which is the best incubator would be quite as difficult as to say which is the worst; they differ simply in detail; the principle in all is the same—viz., hot water—it matters little how the water is heated. Differ amongst themselves as they may about the merits or demerits or infringements of patents, the manufacturers of incubators have all the same end in view—to puff their individual machines and make money by them; they leave purchasers to find out the imperfections. The machines at present sold to hatch eggs are perfectly useless as practical and remunerative incubators. They may answer as an amusement, or as a hobby to waste time and money upon; for all else they are useless.

I have spent a considerable sum of money, and much time and patience in trials with incubators. I have tried warm water, boiling water, and steam; machines heated by gas, oil, spirits, and paraffin; machines where the water flowed and where it did not; and I have had made on principles of my own some that I thought would be sure to answer, but they simply turned out as good, or rather as bad as the others. I think, instead of testing incubators, if you would kindly open your columns to correspondents who have experimented with machines for the purpose of hatching eggs, something may be gained from an account of their failures if not their successes.

I would remark, that eggs in incubators appear to go on very well until about the fifteenth day. I have generally found that about this time the chickens died; numbers have I taken out of the shells perfectly formed and feathered, but dead. Now as to the cause of this I am quite in the dark:—Too much heat or not enough; well, I have hatched strong chicks side by side with those dead youngsters. Not enough ventilation—I do not believe in this much-talked-of ventilation in hatching eggs; I succeed best in hatching under hens when the hens are placed in a greenhouse in close boxes with only a small aperture for the hens to enter, and I am disappointed when I do not obtain twelve chicks from thirteen eggs; I frequently hatch the whole of the eggs. Much ventilation in natural or artificial hatching I have found not beneficial. Want of moisture—now I think we are in the neighbourhood of the mischief; to prevent dry heat in incubators, it is the practice to place water in the machines that moisture may be supplied by evaporation; if you then place a piece of glass in the incubator the surface of that glass will be found to be wet, or at any rate there will be moisture upon it: place another piece of glass under a sitting hen, it will be warm, but will present no appearance of moisture upon the surface. Take two eggs, the one from the machine, the other from under a hen; try both eggs with a thermometer, and they may be both of the same temperature, yet the feel in the hand is perceptibly different. Now, as to whether the contact with the flesh of the fowl has anything to do with this difference or not, I am not satisfied; at any rate, when I have time I intend to try a substance resembling to the touch the flesh of a sitting hen, and that substance is india-rubber. If a solid india-rubber bag, similar to those used by invalids when travelling (I do not mean stuff waterproofed with india-rubber), be filled with warm water, it will be to the touch exactly the same as the flesh of a sitting fowl; there is, in fact, a moist heat without perceptible moisture. I give the idea for others to work upon if they like.

I have already, I am afraid, made my letter too long, or I could add much relating to hatching eggs by artificial means.

We are not, I think, now as successful even with incubators as Réaumur and Bonnemain were in the last century, for it is stated that the machine made by the latter supplied the table of Louis XIV. with chickens. If I can render any information relative to incubators to any of your correspondents experimenting with machines, I shall be most happy to do so.—MERRYFIELDS.

BATH AND WEST OF ENGLAND SOCIETY'S POULTRY SHOW.

ALTHOUGH there were many persons who predicted that a second year's consecutive meeting of the Bath and West of England Society at Salisbury would prove a failure so far as the exhibition of poultry and Pigeons was concerned, we are much gratified to find that such unfavourable anticipations were by no means realised, for, on the contrary, it has very rarely, if ever occurred that so complete a success has been attained. Under the able and unceasing superintendence of Dr. Brent, of Exeter, and R. H. Bush, Esq., of Clifton, the acting management of the poultry department of this Society has become most popular, as an entry of over four hundred pens sufficiently attests.

It is well known among poultry-breeders that the present spring has been peculiarly unfavourable for the production of early chickens, the rapid changes of weather completely upsetting the calculations of the most careful and experienced, and even old birds have suffered very considerably from this cause also; yet, on the whole, the condition was better than could be anticipated. A single glance along the poultry tent proved that such vicissitudes had told most severely on the *Spanish* and Grey *Dorking* classes, want of general condition in them being the order of the day—in fact, it was in these two classes only that any considerable falling off occurred. The White Dorkings were, however, unusually good, though we could have wished to see a more extended entry. The Buff *Cochins* were of great merit, and the Partridge-coloured ones are worthy of especial mention. The *Brahmas*, with the exception of the winning pens, were not so good as we have met with on previous occasions, many of the pens being very negligently matched for exhibition. The *Game* classes contained many most excellent specimens, and the *Hamburghs* and *Polands* were capital. The Variety class was remarkably well filled, and some, especially trne-feathered Cuckoo-coloured Cochins, obtained much public notice. The Water fowls were excellent, and the representatives of both fancy and table birds in these classes were remarkably well shown. In *Bantams* this year's show was far in advance of previous ones, the Game Bantam class alone containing nineteen good pens.

Pigeons were numerous, and most of the classes such as left little room for improvement.

The weather was most favourable, and the poultry-tent, itself one of the best constructed we ever met with, was constantly one of the chief attractions of the showyard. To give greater opportunities of competition, a cock and *one* hen only were by rule shown this year (as most carefully laid down for the guidance of exhibitors), and it was, therefore, a matter of great regret to find that a very large number of excellent pens were thrown completely out of competition from non-attention to this regulation. The additional second hen thus shown, through the neglect of owners, caused many of the best pens certain defeat, as in all instances they were passed unnoticed. Exhibitors cannot be too careful in their attention to this particular before entering for competition, as regulations must be rigidly enforced. It was a matter of general congratulation that the health of the poultry shown was good without exception, and the great attention evinced in providing for the wants of the birds during their somewhat lengthy stay at Salisbury was all the most anxious owner could desire.

SPANISH.—First and Second, E. Jones, Clifton, Bristol. Third, R. Fulton, Deptford, Kent. Commended, Viscountess Holmesdale, Linton Park, Staplehurst, Kent.

DORKINGS (Coloured).—First, Viscountess Holmesdale. Second, L. Patton, Taunton, Somerset. Third. Dr. Hewson, Coton Hill, Stafford, Staffordshire, Commended, C. Cork, New Shoreham, Sussex.

DORKINGS (White).—First and Second, H. Lingwood, Barking, Needham Market, Suffolk.

COCHIN-CHINA (Cinnamon and Buff).—First, G. Shrimpton, Leighton Buszard, Beds (Buff). Second, J. H. Dawes, Birmingham. Highly Commended, Mrs Llewellyn, Court Colman, Bridgend, Glamorganshire; W. Bayliss, Walsall, Staffordshire (Buff). Commended, F. W. Rust, Hastings, Sussex (Buff.)

COCHIN-CHINA (Brown and Partridge-feathered).—First and Second, J. Stephens, Walsall, Staffordshire (Partridge). Commended, J. K. Fowler, Prebendal Farm, Aylesbury, Bucks (Partridge.)

COCHIN-CHINA (White).—First, F. W. Zurhorst, Dublin. Second, H. Hobson, Walsall, Staffordshire.

BRAHMA-POOTRA (Dark).—First, R. W. Boyle, Bray, Wicklow, Ireland. Second, J. K. Fowler. Highly Commended, Lieut.-Col. Lane, Lily Hill, Bracknell, Berkshire. Commended, Col. Stuart Wortley, Grove End Road, London; Lieut.-Col. Lane.

BRAHMA-POOTRA (Light).—First, F. Crook, Forest Hill, Kent. Second, H. Dowsett, Pleshey, near Chelmsford. Highly Commended, F. Crook. Commended, J. Pares, Postford, Guildford, Surrey.

GAME (White and Piles).—First, Rev. G. S. Cruwys, Tiverton, Devon (Piles). Second, S. Matthew, Stowmarket, Suffolk. Commended, Rev. F. Watson, Kelvedon, Essex.

GAME (Blacks and Brassy-winged, except Greys).—First, Rev. G. S. Cruwys (Black). Second, J. Pares (Black). Commended, A. D. Edwards, Huddersfield, Yorkshire (Black); C. Bulpin, Bridgewater, Somerset.

GAME (Black-breasted and other Reds).—First, S. Matthew. Second Rev. F. Watson. Highly Commended, H. Loe, Appledurcome, Godshill, Isle of Wight. Commended, T. L. Mills, Orcheston St. Mary, near Devizes Wilts; Rev. G. S. Cruwys.

GAME (Duckwings and other Greys and Blues).—First, S. Matthew. Second, T. Dyson, Halifax, Yorkshire. Commended, Rev. G. S. Cruwys.

HAMBURGHS (Golden-pencilled).—First and Second, F. Pittis, jun., Newport, Isle of Wight. Highly Commended, S. Onley, Cheltenham.

HAMBURGHS (Silver-pencilled).—First, H. Pickles, Earby, Skipton, Yorkshire. Second, H. Beldon, Goitstock, Bingley, Yorkshire.

HAMBURGHS (Golden-spangled).—First, I. Davies, Harborne, near Birmingham. Second, Messrs. S. & R. Ashton, Mottram, Cheshire. Highly Commended, W. A. Hyde, Hurst, Ashton-under-Lyne, Lancashire. Commended, N. Marlor, Denton, near Manchester.

HAMBURGHS (Silver-spangled).—First, H. Beldon. Second, A. K. Wood, Castle Donington, near Derby. Highly Commended, Mrs. Pettat, Ashe Rectory, Overton, Hampshire.

POLISH (Black, with White Crests).—Prize, H. Beldon.

POLISH (Golden).—First, H. Beldon. Second and Commended, Mrs. Pettat.

POLISH (Silver).—First, H. Beldon. Second and Commended, G. C. Adkins, The Lightwoods, near Birmingham.

MALAY.—Prize, J. Hinton.

ANY OTHER DISTINCT VARIETY.—First, Col. Stuart Wortley (French). Second, Rev. D. B. Binney, Shirley, Southampton (Crêve Cœur). Equal Second, J. C. Phair, Southsea, Hants (Cuckoo Cochins). Equal Third, S. A. Wyllie, East Moulsey (Houdan and La Flèche). Equal Third, Miss S. H. Northcote, Upton Pynes, near Exeter (White Spanish). Highly Commended, Col. Stuart Wortley (French); J. C. Phair (French); J. K. Fowler (Crêve Cœur). Commended, J. Pinckney, Great Durnford, Salisbury (Crêve Cœur); J. H. Amory, Bolham, Tiverton (Sultan); J. C. Cooper, Cooper Hill, Co. Limerick (Crêve Cœur and Sultan); J. W. Harrison, Spalding (Cuckoo Cochin); Miss S. H. Northcote (Black Minorcas).

GUINEA FOWL.—First, Miss S. Northcote. Second, T. C. Harrison.

DUCKS (White Aylesbury).—First and Second, J. K. Fowler. Highly Commended, Mrs. L. M. Squarey, Oldstock, Salisbury. Commended, H. Dowsett.

DUCKS (Rouen).—First and Second, G. N. Hulbert, Perrott's Brook, Cirencester. Highly Commended, J. W. Harrison; H. Dowsett. Commended, C. Edwards, Wrington, Somerset.

DUCKS (Any other variety).—First and Second, T. C. Harrison. Extra Third, W. Pinckney (Muscovy). Commended, J. H. Amory (White Musk); W. C. Finch, Salisbury (Peruvian Musk).

GEESE.—First, J. K. Fowler. Second, L. Patton, Comeyt rowe House, near Taunton. Highly Commended, J. C. Cooper; L. Patton.

TURKEYS.—First, J. C. Cooper. Second, Capt. Warren, Basingstoke.

BANTAMS (Gold or Silver-laced).—First, Mrs. Pettat (Silver-laced). Second, Messrs. S. & R. Ashton, Mottram, Cheshire.

BANTAMS (White or Black).—First, N. Marlor, Denton, near Manchester. Second, J. R. Jessop (White). Highly Commended, Miss K. Charlton, Chapelthorpe, near Wakefield (Black). Commended, Mrs. F. H. Freke, Highworth, Wilts (Black, and Clean-legged Black); Messrs. S. and R. Ashton (Black); Rev. P. W. Story, Daventry, Northamptonshire (White Feathered-legged).

BANTAMS (Game).—First, A. I. Robson, Sunderland, Durham (Black Red). Second, F. Pittis, jun. Extra Third, T. Dyson, Halifax, Yorkshire. Commended, T. H. Wyndham, Salisbury, Wilts; S. Lang, jun., Burrow, near Bristol, Somersetshire (Black Red); J. K. Fowler (Black-breasted Red); E. Sheerman, Chelmsford, Essex.

SINGLE COCKS.

SPANISH.—First, withheld. Second, J. Langdon, Sherborne, Dorset.

DORKING.—First, J. W. Harrison. Second, H. Dowsett. Highly Commended, Viscountess Holmesdale.

COCHIN-CHINA.—First, H. Mappleheck, Wondfield, Moseley, Birmingham (Buff). Second, J. H. Dawes, Moseley Hall, Birmingham (Buff). Highly Commended, S. Onley, Cheltenham (White); R. Barrett, Stroud, Gloucestershire (Buff); J. Cattell, Birmingham (Buff). Commended, E. Pigeon, Lympstone, near Exeter (Partridge Cochin); J. K. Fowler (Partridge).

BRAHMA POOTRA.—First, R. W. Boyle, Bray, Co. Wicklow (Dark). Second, G. Meares, Thornhill, Bittern, near Southampton (Light). Commended, J. K. Fowler.

GAME.—First, Rev. A. G. Brooke, Ruyton XI. Towns, Salop (Black-breasted Reds). Second, S. Matthew. Highly Commended, S. Dupe, Evercreech, Bath; Rev. G. S. Cruwys.

ANY OTHER DISTINCT VARIETY.—First, J. Hinton (Silver Polands). Second, J. Pinckney (Crêve Cœur). Highly Commended, F. Pittis, jun. (Golden-pencilled Hamburgh).

PIGEONS.

CARRIERS (Blue or Silver).—First, R. Fulton, Deptford, Kent (Blue); Second, J. C. Ord, Pimlico, London (Blue). Commended, J. C. Ord (Silver).

CARRIERS (Any Colour except Blue or Silver).—First and Second, R. Fulton. Extra Second, J. W. Harrison, Spalding, Lincolnshire (Dun).

TUMBLERS (Almond).—First, R. Fulton. Second, J. Ford, Monkwell Street, London. Highly Commended, J. Ford; J. E. Breward, Coventry. Commended, R. Fulton; H. Yardley, Birmingham.

TUMBLERS (Any other variety).—First, R. Fulton (Short-faced). Second, H. Yardley. Commended, R. Fulton; F. Mills, Orcheston St. Mary, Wilts (Bald-pate).

POUTERS.—First and Second, R. Fulton. Highly Commended, R. Fulton; J. Gould, jun., Taunton, Somerset; J. E. Breward, Coventry.

RUNTS.—Prize, H. Yardley.

JACOBINS.—First, C. Bulpin. Second, Rev. F. Watson.

FANTAILS.—First, S. A. Wyllie, East Moulsey, Surrey. Second, H. Yardley. Highly Commended, H. Yardley. Commended, Miss J. Milward, Newton St. Loe, Bath.

OWLS.—First, S. A. Wyllie. Second, C. Bulpin.

TRUMPETERS.—First and Second, C. Bulpin.

BARBS.—First, R. Fulton. Second, S. Dupe, Evercreech, Bath, Somerset.

TURBITS.—First, Rev. F. Watson. Second, C. Bulpin. Highly Commended, H. Yardley.

NUNS.—First and Second, C. Bulpin.

DRAGONS.—First, H. Yardley. Second and Highly Commended, E. Pigeon, Lympstone, near Exeter.

ARCHANGELS.—First, C. Bulpin. Second, H. Yardley.

Any other New or Distinct Variety.—First, H. Yardley. Second, Extra Second, and Highly Commended, F. Broemel (Ural Ice Pigeons, Fairy Swallows, Swiss). Commended, H. Yardley; H. Snushall, Gedney, Lincolnshire (Spangled German Ice Pigeons.)

The Arbitrators were Edward Hewitt, Esq., of Sparkbrook, Birmingham; and W. B. Tegetmeier, Esq., of Muswell Hill, London.

ALBION SOCIETY'S SHOW OF PIGEONS AND FANCY RABBITS.

The first Show of this Society, held in the Dining Halls, Cambridge Street, Birmingham, commenced on the 11th inst., and will continue till the 14th.

PIGEONS.

Carriers.—*Cocks.*—First, H. Yardley, Market Hall, Birmingham. Second, F. F. Foster, Navigation Street, Birmingham. *Hens.*—First, F. F. Foster. Second, H. Yardley.

Pouters.—First, F. F. Foster. Second, H. Yardley.

Balds and Beards.—First, H. Yardley. Second, F. Waitt, Birmingham. Commended, F. F. Foster.

Tumblers.—*Almond.*—First, F. F. Foster. Second, E. D. Careless, Birmingham. Highly Commended, H. Yardley. *Short-faced.*—First, F. F. Foster. Second, H. Yardley. Highly Commended, E. D. Careless. *Other than Short faced.*—First and Commended, F. F. Foster. Second, J. W. Edge, Aston New Town. *Muffed.*—First and Second, E. D. Careless.

Runts.—First and Second, H. Yardley.

Jacobins.—First, H. Yardley. Second, J. W. Edge. Commended, F. F. Foster.

Fantails.—First, H. Yardley. Second, J. W. Edge. Commended, H. Yardley; F. Waitt.

Trumpeters.—First, H. Yardley. Second, F. F. Foster.

Owls.—First, H. Yardley. Second, J. W. Edge.

Nuns.—First and Commended, J. W. Edge. Second, H. Yardley.

Turbits.—First, H. Yardley. Second, J. W. Edge.

Barbs.—First, F. F. Foster. Second, H. Yardley. Commended, J. W. Edge.

Archangels.—First and Second, H. Yardley.

Swallows.—Prize, J. W. Edge.

Magpies.—First, J. W. Edge. Second, F. Waitt, Birmingham. Commended, H. Yardley; F. F. Foster.

Dragons.—First, J. W. Edge. Second, H. Yardley. Highly Commended, J. W. Edge.

Antwerps.—First and Second, H. Yardley. Commended, J. W. Edge.

Any other New or Distinct Variety.—First and Third, H. Yardley (Blue and Black Fairies, Swiss, and Ural Ice). Second, F. Waitt (Ural Ice and Black Fairies). Fourth and Fifth, F. F. Foster (Red Fairies and Swiss). (An excellent class. The whole class highly Commended.)

RABBITS.

For Length of Ears (Grey and White).—*Buck.*—First, B. Johnson, Birmingham. Length of ears, 22½ inches; width, 5¼ inches. Second (Yellow and White), B. Johnson, Length, 22 inches: width, 5¼ inches.

Black and White (For all properties).—*Buck.*—First, H. Beech, Birmingham. Length of ears, 20¼ inches; width, 5 inches. *Doe.*—Second, W. H. Webb, Deepfields, near Bilston. Length, 19⅞ inches; width, 5 ins.

Yellow and White (For all properties).—*Doe.*—First, H. Attwood, Birmingham. Length of ears, 19⅞ inches; width, 5 inches. *Buck.*—Second, B. Johnson. Length, 20¼ inches; width, 5¼ inches.

Tortoiseshell (For all properties).—*Doe.*—First, W. Worrall, Smethwick. Length of ears, 20¼ inches; width, 5 inches. Second, H. Attwood. Length, 19½ inches; width, 5 inches.

Grey and White (For all properties).—*Buck.*—First, W. H. Webb. Length of ears, 19¾ inches; width, 5 inches. *Doe.*—Second, H. Attwood. Length, 19¾ inches; width, 4⅞ inches.

Self Colour.—*Grey Buck.*—First for colour and Second for weight, H. Attwood. Length of ears, 21 inches; width, 5⅜ inches. Weight, 8 lbs. 10 ozs. Second for colour and First for weight, B. Johnson. Length, 20⅜ inches; width, 5 inches. Weight, 11 lbs.

Judges.—Mr. S. Coleman, Mr. B. Guest, Mr. C. Hall, and Mr. J. Newton.

GAME FOWLS.

I think that "Yorkshire" advocates breeding rather too closely in his last article (page 286), and if it could be avoided, I should object to breeding any nearer than with a "first-cousin" strain in breeding in-and-in. With all due deference to the opinion of "Yorkshire," in which he is not singular, I still adhere to the "well-up," well-sickled, and spreading or fanned tails, which should be narrow only at the base of the tail. I do not, of course, like a broomy tail, as being too thickly feathered, but think that the switch tails present the shape of a broom more than the spread tails.

In hens of the same strain, I prefer the spurred ones, as harder and throwing more cock chickens. They are also, I think, deeper or higher bred as a rule, and cock-fighters prefer them, if of first-rate shape, to other hens. Of the two hens which "Yorkshire" instances, the Black was probably of the slower strain, as Blacks are generally slower than the Spangled, and the latter are quicker, and shorter in body generally. I have never seen spurred Black hens, and I think pure-bred Blacks are too slow for the pit, though the Brassy-winged Black cocks are quite equal in general to the best willow-legged Black-breasted Red cocks.

As to the weights in the mains of the present day, the average is, perhaps, 5¼ lbs. and varies from 4½ lbs. up to 9 lbs.

I have a few notes on the Duke of Leeds' "Shackbags" of one hundred years ago, and others relating to Colonel Mordaunt, afterwards, I think, Sir John Mordaunt, Bart. Could "Yorkshire" state what colour the "Shackbags" were of?

I have heard of the Muscovite Black and Brown Game fowls as being of the Muffled variety of Game fowls. I have also heard of Mr. R. M. T. Scrimminger as a breeder living near Lutterworth, in South Leicestershire, and breeding the two Red varieties. I think he took a silver cup at Birmingham for Brown Reds, and a first prize for Black-breasted Reds at the same time—in 1865. He is a cocker, I hear.

All the breeders I mentioned are breeders and not buyers of Game fowls, but Mr. Gamon has since sold off his whole stock; so has Sir St. George Gore, I am sorry to see. I think that Mr. Brierley's Black-breasted Reds are, perhaps, the very best and handsomest birds as to colour ever exhibited. They have the true red eye, are of a most brilliant red colour, of good shape, and spirited carriage, and are evidently of very good blood. I see they took both first prizes for Black-breasted Reds at the last Accrington Exhibition, which shows that Messrs. Teebay and Tegetmeier judged that class very correctly. I admire Mr. Statter's Brown Reds for their short bodies, good shape, and spirited carriage, and for their dark brown, not black hens, of the true Brown Red colour, and for the red-brown breasts in the cocks. I do not think Mr. Brierley's Brown Reds so good as many other strains, though they are good. Mr. Brierley should not mix his splendid strain of Black-breasted Reds with Brown Reds, or any other colour, or he will certainly spoil them, and brown their colour, spoil the red eye and bright plumage, and mar all their best characteristics.

As to Piles, I think the best ever exhibited were shown at the Birmingham Exhibition ten or twelve years ago, by a Mr. Richard Dummeller, of Shackerstone Heath, near Atherstone, Warwickshire. These birds took several first prizes at Birmingham, and were evidently of very high blood; they had red eyes and white legs. Mr. Brierley's Black-breasted Reds would make splendid Piles, putting a red-eyed Pile cock to the hens. As to red-eyed willow-legged Duckwings, I think a Mr. Henry Shield, of Preston, near Uppingham, Rutlandshire, bred the best I ever saw; they were very short in body and were very quick. He had also some capital White Game—red eyes, white legs—and the best Ginger Brown Reds, with willow legs, I ever saw. He bred all colours, including Blues and the Ginger Blues. He has now moved to near Northampton, I hear.

Could "Yorkshire" say which was the old favourite colour for the pit in Yorkshire prior to the introduction of the Brown Reds? which sort, I think the Yorkshire breeders had chiefly from Lancashire, a county which has rather better birds than Yorkshire in general; also, what other breeds the late Earl of Mexborough had besides the Ginger-backed Yellow Duckwings? I think Bradford and its vicinity has about the best birds in Yorkshire. Staffordshire and Cheshire have some capital birds, I know. I think Lancashire stands first.—Newmarket.

INCREASE OF PRIZES FOR RABBITS.

In reply to the suggestions of Mr. John Taylor, Sheffield, in your last issue, permit me to inform him and other Rabbit fanciers, that the Committee of the Wolverhampton Poultry Show have resolved to add Rabbits to their prize list this year, and had, some days before the publication of Mr. Taylor's letter, decided upon the very amounts he wishes as prizes—viz., first prize, £1; second, 10*s.*; the entrance-fee to be also as he suggests, 2*s.* Our schedule is preparing, and particulars will appear in your advertising columns shortly.—Thomas J. Barnett, *Secretary.*

LIGURIAN DISAPPOINTMENTS.

Mr. T. Addey, sen., has sent us a long letter, in which he states that he was employed in Messrs. Neighbour's apiary for fourteen weeks during the last summer, and that he did not find that their bees had foul brood. We regret to say, however, that we have now before us the most conclusive evidence that "J. B.'s" is not the only instance in which Messrs. Neighbour have sent out infected stocks. Mr. Addey also states that Mr. Carr has presented him with a drone-breeding queen, and recites two instances in which his bees have done well. This does not, however, disprove the fact that the stock sent to "J. B." proved a complete failure, and that Mr. Carr not only withheld all compensation, but has left his letters unanswered.

BEES AND BEE-KEEPING IN EGYPT.

It may be remembered that in No. 278 of "our Journal," when commencing a series of articles upon "The Egyptian Bee," I stated that the distinguished German apiarian Herr Vogel had taken charge of the illustrious little strangers, whose involuntary migration into Europe had been made under the auspices of the Berlin Acclimatisation Society. After succeeding to admiration in multiplying and disseminating his interesting *protégées*, Herr Vogel seems to have been inspired with the desire of making the acquaintance of *Apis fasciata* in its own habitat. This desire he was enabled to gratify during the spring of 1866, and, I have now much pleasure in submitting to the readers of "our Journal" a translation of the very interesting account which he has given of his apiarian observation during his Egyptian trip.—A Devonshire Bee-keeper.

THE EGYPTIAN BEE.

The recluse who never moves outside the four walls of his house, or at the farthest goes not beyond the familiar shade of the trees in his own garden, may well believe that the sun shines not on foreign lands, and that the inhabitants of distant countries must perforce dwell in utter darkness; but the bee-master should at least know from what field and from what flower his bees gather sweet nectar and gaily-tinted pollen, as well as the places from which they fetch water. The reader of our bee Journal may also if he pleases travel in thought through Germany, Italy, Poland, Russia, and by land to all the countries of Europe—by water to America, Asia, and Africa; to the lands of the Mohammedan and the heathen, and witness how the little bee is everywhere provided for by the beneficent Creator, and how she is fostered by man.

Let me beg the courteous reader to permit himself to be in thought transported with me through the air and over the blue waters of the Mediterranean to the ancient city of Cairo. But Cairo alone, the unsubdued or rather the invincible, is not, with all her glory and magnificence, sufficient to captivate us, for we are anxious to see the little bee and the Egyptian bee-masters. Hiring donkeys, the driver straightway conducts us to Old Cairo, and to the Arab Soliman, who is gravedigger in the English churchyard. Here accordingly we find the old Arab occupied in the God's-acre under the shade of the tall trees; but he is not now making a last resting-place in the cool ground for any child of man, but is only closing a bee-hive, into which he has just shaken a swarm of his wards. Our dragoman introduces us as European bee-keepers who are come to sit at the feet of the Egyptian bee-master, and listen to the teachings of Egyptian wisdom. Alas, it is not permitted to us to read in the eyes of the Arabian bee-master the impression which this representation has made upon him. Soliman certainly wears no yash-mak, like the feminine beauties or ugly ones of his land, but has simply a bee-cap drawn over his head. We express to him our surprise at seeing in Old Cairo a bee-cap exactly similar to those we have met with in Europe, when Soliman at once becomes communicative, and relates as follows:—"In the year 1242* the foreigner Hammerschmidt bought of me a stock of bees, which he took to Europe. In the following year Hammerschmidt came again from Berlin, a town of the unbelievers in the cold north, to Cairo, and brought me this cap as a present. The inventor of the bee-cap is Vogel, a bee-keeper in Europe who received my bees. Neither my father, nor my grandfather, nor great-grandfather knew bee-caps, and formerly I also continually went amongst my bees without a bee-cap. How proud, then, am I to possess the first bee-cap in the land! How costly is the material of this fabric! The great Prophet himself could not have worn worthier or better raiment! The colours of the material and of this band, are they not excellent and ravishing to the eye as a rose that is kissed by the first blush of the dawn? Vogel's friend has washed this fabric with pearls of dew in the morning, and dried it in the evening glow of the heavens!"

We miss hearing the farther praises of the bee-cap whilst making the following note in our diary:—

1. "In the year 1865, the Berlin Acclimatisation Society sent through the photographer Hammerschmidt a bee-cap, which Vogel had furnished, to the Arab Soliman, in Old Cairo. This cap is the first in Egypt."

We are pleased at the truthfulness of the Arab, who does not extol himself as the inventor of the bee-cap, whilst we pardon his mistake † in ascribing the invention to Vogel.

In order not to weary the reader with the diffuse and pompous speeches of the old Arab, we merely extract the farther notices from our diary, permitting ourselves only to add some explanatory remarks.

2. "The ruler of the bees is slender as a palm tree, the male heavy as a crocodile; the slaves are most like the mother, must work day and night, cleave in love and service to the ruler, and slaughter the males at command. The ruler orders the murder of the males as soon as the flowers are withered in the heat of summer; the males are unable to defend themselves in that they are stingless. If the males were to remain alive in the summer they would obtain authority; but in the bee-community only the mother shall rule."

The Arab also knows three different kinds of bees—the queen, drones, and workers. He says that the worker-bees may be so attached to the queen because they owe their existence to her. The egg of the bee is not unknown to the Arab bee-master; he knows that out of it will come a worm, and in time a young bee.

3. "Bees swarm in Old Cairo in the month of March, when the clover begins to flower. At this time the Arab daily lays his ear on his stocks in order to hear when the old mother-bee begins to 'weep'. When this 'weeping' is heard he counts upon a swarm being pleased to issue the next day. As the queen will then forsake her children and her government to found a new empire, the Arab deems the sounds of lamentation very natural."

We can scarcely understand this mistake in respect of swarms. Soliman firmly maintains that swarms can be looked for only when the rulers "weep" (pipe or clack). From what we heard, we concluded that the Arab first watches for swarms when a stock has already sent off a prime swarm, and when the young queens in the stock hives pipe and clack. The first prime swarms must therefore certainly fly off, unless he should by accident discover them hanging on a tree. To the question, Whether he did not sometimes have a swarm without the queens having "wept," he answered that then he had either missed hearing the "weeping," or the swarm found was a wild (flown away) one.

4. "The swarms are shaken into empty cylinders. In order that the bees may be pleased with their new dwelling, empty and full honeycombs are set up in it. This can be easily done, as all cylinder-hives are of equal width. Each comb must be placed on a forked stick, and by means of this may be firmly fixed, if the length of the stick be the same as the diameter of the hive."

It is certain that during the past hundred years the Egyptians have been able to prevent swarming. Soliman is, in this point of his practice, perfectly Dzierzonian, without, however, knowing Dzierzon's name. That the Arab prevents swarming in order to dry the tears of the ruler of the swarm, is, practically, of no importance whatever.

5. "If a stock swarms, notwithstanding that the queen has not yet 'wept,' the Arab makes an artificial swarm. When the bees have taken flight, he, towards evening, stops the entrance in the front disc of the cylinder, opens the door behind, takes out a portion of the comb with the bees hanging on it, and places it carefully in an empty cylinder. In order not to weaken one stock too much, he takes combs and bees from two or three hives, and forms his artificial swarm by putting them all together. When the back door is again closed the front entrance is opened, so as to receive into the parent stock, instead of into the artificial swarm, those bees which have collected during the removal of the combs. The Arab thinks that he has then a queen in the new stock, and that otherwise the operation fails. 'When,' says Soliman, 'I do not divide and remove the bees at the right time, the young bees kill their old mother and cast her dead body out of the hive.'"

Our friend Soliman also understands dividing and transporting. He only divides those stocks that have young queens which pipe and clack. He always takes care that he has a young queen in the artificial swarm, because after a queen has been hatched the divided swarm would not have suitable brood for raising a queen, as when a stock pipes and clacks after the first swarm has issued all the brood is already sealed over. That artificial swarms may be made with brood only, passes the comprehension of the Arab, and thinking is not his *métier*. I doubt not that to this day there are old boys in Germany that know no more of the manner in which a queen is produced than Soliman himself. Some years since a bee-keeper died in this neighbourhood, who never could thoroughly comprehend that it was possible for the bees to raise a queen out of an

* Hegira. † *Errare humanum est.*

ordinary worker-egg or larva. In order to demonstrate the matter to him *ad instantium* and *ad oculos*, I made on my own stand, and before his eyes, an artificial swarm by means of brood-comb. Every comb did he most rigidly examine, and finally declared it certain that no royal cells were there. Eight days afterwards I took this opposer of the march of intellect to the artificial swarm, lifted out the combs, and showed him five adhering royal cells. "Yes," he admitted, "those are queen cells." I detained the old man in order to convince him, and described the manner in which a queen-bee was reared. During my discourse he shook his head, as I fondly thought, in wonder at the marvellous instinct of the bee; but some days afterwards I heard that this incredulous and mistrustful blockhead had thus expressed himself:—"Why, this blunderer would make me believe something. He puts royal cells into the hive behind my back, and would then persuade me that the queenless bees had built them." *Roma locuta, res finita,* thought I. Our bee-colleague Soliman could, indeed, hardly have expressed himself worse.—W. Vogel.

(To be continued.)

ARTIFICIAL SWARMS.

Until I received a hive of Ligurians from Mr. Woodbury last year I had not adopted frame-bar hives; I then had some made. They were painted of a brilliant red colour, and with these I attempted to make artificial swarms of Ligurians, by taking a comb of Ligurian brood, putting it into one of these frame-bar hives, and placing the latter in the room of a strong stock of black bees when a large number of them were out foraging. The stocks of black bees used for the purpose were in straw hives, Stewarton octagons, painted red, &c. The result in every case was the same. The black bees on seeing the frames refused to enter the frame-bar hives; honey dropped within the entrance failed to overcome their repugnance, and after waiting undecided for a time, they at length crowded round the entrance to the nearest stock hive, to which they slowly advanced, fanning with their wings, and in other ways intimating to the occupants their peaceful intentions and desire to be admitted into fellowship. I nearly closed the entrance to the stock hive, the better to enable the inmates to offer resistance; but this they did not appear disposed to do, for many of the applicants for admission were heavily laden with pollen, and, doubtless, with honey. I then closed the entrance, swept away the besiegers, and covered the hive with a cloth. The strangers then went under the stool, and found their way thus under the cloth to the closed entrance of the hive. I took away the cloth, removed the obstruction from the mouth of the hive, and the entire mob of strangers rushed in. There was no instance of fighting—indeed, I think the occupants were delighted to see their visitors laden with presents, each bearing a contribution to the wealth of the community. However, on the following day there was a commotion in some of these hives (not in all), the bees rushing out and up the front and there clustering; possibly there may have been some instances of queen encasement; but the disturbance subsided in the course of the day, and the affairs of the hive went on smoothly.

Now, in many of these cases the bees which refused to enter the untenanted frame-bar hive containing Ligurian brood comb, nevertheless did subsequently enter a neighbouring stock hive totally different in appearance from their own; the bees of a common straw hive freely entering a Stewarton octagon painted red, and *vice versâ*: so the empty frame in the frame-bar hive appears to have been the objection.

In order to utilise the black bees in raising Ligurian queens in this way I raised the stocks of black bees intended to be used on frame hives, of course taking away the crown-board, and filling in the open corners of the frame hive with triangular pieces of wood, and making all tight and close with brown paper and paste. The black bees thus soon became accustomed to the frames, and I had no further difficulty in using them for the purpose named.—M. S.

[The persistent refusal of your black bees to enter the strange domicile to which you invited them, was doubtless owing to the Italian brood comb being denuded of bees. Whenever an artificial swarm is made by removal in the manner above described, all the bees that adhere to the brood comb should be suffered to remain on it, making sure, however, that the queen is not among them by previously ascertaining her presence on another comb. The wanderers who find themselves so suddenly rendered homeless will then more readily enter their new habitation, and no serious quarrel need be feared. Another advantage is, that the young bees adhering to the comb furnish the embryo colony with the class of "nurses" described by Huber, which are much more likely to succeed in raising queens than a chance-medley collection of foragers, which may from age have become either wholly or partially disqualified for the task. If other stocks are in close proximity, it is well also to prepare for the operation by shutting them up overnight, and removing them out of the way of the wanderers until they have entered and accepted their new domicile.]

OUR LETTER BOX.

Basingstoke Poultry Show.—Mr. C. Cork took the second prize for Dorkings at this Show.

Brahmas at Launceston Show.—The first prize was awarded to T. Richards, Devon Great Consols, Tavistock,

Poultry Farm for Eggs.—If "*Er*" will enclose to our office a letter in a stamped envelope, we will direct it to "Toby."

Game Cock (*R. C.*).—We are not surprised at the bird's deficiency in courage, for the inhabitants of the yard from which you purchased him were bred for exhibition, not for the cock-pit.

Remedy for Gapes (*W. T.*).—According to your list of failures, you have unsuccessfully tried every known remedy for the gapes. We have never known camphor fail. We have not had a case of gapes this year, last year we cured hundreds with camphor pills and camphor julep. We have used a decoction of wormwood in all our chickens' water this year, and we believe it has acted as a preventive. Our theory has always been, that these parasitical worms came from larvæ that are peculiar to rain water. The worms are identical, or almost so, with the myriads that are to be seen at the bottom of a water-butt which catches rain-water. If these are brought in contact with camphor they die at once; now if you handle a chicken a few hours after it has taken a couple of pills of camphor, it is completely saturated with it and smells of it. As the parasites lie at the back of the crop, and the camphor is in the crop, the smell of it reaches them, and they die.

Dubbing Game Bantam Cocks (*P. Crowley*).—Except when shown as chickens, Game cocks of every description must be dubbed. Cruel as it may seem, it is not so in reality. It is their nature to fight, and those who may have seen the condition of those that have fought when undubbed, will never call the operation a cruel one. After ten minutes' fighting, a bird fighting with his head furniture entire is, indeed, a pitiable object: his gills hang down in strips, the serrations of his comb are hardly distinguishable, while the comb itself is a mass of bleeding wounds. The deaf ear is generally torn open, and from the purchase given to his antagonist he is a terrible sufferer. All this is avoided by dubbing, and the bird shows for fight, if fighting be necessary, like an "athlete," with his skull round and close-cropped, instead of long hair, affording advantage to his opponent.

Eggs not Hatching (*Château Vallon*).—The cause of the putrefaction of the eggs in question is, that they were originally good, and were sufficiently sat upon to develope the germ of life. This was allowed to perish from some cause, and hence corruption. Each is a dead egg, but it once had life. The probable cause of failure has been, that the hen has left them to feed early in the morning, and while she was off they were chilled. This has been fatal to them. In ordinary seasons, at the end of May, a hen may leave her eggs for hours with impunity, the atmosphere is warm enough to prevent their being chilled, but this year we had in the last week of May from 3° to 7° of frost. There is no hope of eggs that were exposed to this ever producing birds.

Grass Seeds for Sandy Soil for a Poultry Run (*Suffolk Dorking*).—You may, after the potato crop is cleared in July, have the ground prepared; and with the first prospect of rain sow of Italian Rye Grass, 10 lbs.; Lolium perenne, 18 lbs.; Festuca duriuscula, 4 lbs.; Festuca rubra, 4 lbs.; Dactylis glomerata, 4 lbs.; Cynosurus cristatus, 4 lbs.; Poa nemoralis, 2 lbs.; Poa pratensis, 2 lbs.; and Trifolium repens, 8 lbs. Lightly bush-harrow after sowing, and well roll. You will by sowing then gain a season.

Hens Eating Each Other's Feathers (*J. R.*).—Spanish fowls are more prone than any to eat each other's feathers, and, like most bad habits, it finds many imitators. There is no doubt it arises in the first place from the lack of some necessary food—something they require at this season of the year. Those that have no access to grass always do it. We believe if they are supplied with a grass run they always discontinue the habit. A good supply of lettuces cures them, and those that are gone to seed are the best for the purpose. If you cannot give your fowls a grass run, let them have large sods of growing grass, cut with plenty of mould, thrown into their pens daily, and supply them with lettuce freely.

Ducklings Dying in the Shell (*M. H.*).—Your Duck's eggs are set under hens, and you allow them to undergo the same process as if they were fowl's eggs. The ducklings die in the shells because they are too dry, and the inner membrane of the egg becomes consequently so tough that the inmate cannot emerge. If the Duck sat for herself she would be off and in the water night and morning. She would return dripping with water and sit on the eggs, thoroughly wetting them twice every day. If you will do the same your eggs will hatch.

Diarrhœa in Chickens (*W. Z.*).—Your food is too heating. Give them ground oats slaked with water, as thin as can be without waste, for a few days, and, if they will peck it, the tender heart of lettuces. Discontinue eggs, bread, and all stimulants. Earth worms are often useful in removing this malady, which becomes incurable in a few days.

Hen with Inflamed Vent (*G. P.*).—Oil your finger, and with it return the protruding vent. Give the hen a tablespoonful of castor oil, feed on soft food only, and give abundance of lettuce leaves. Her egg-passage is inflamed.

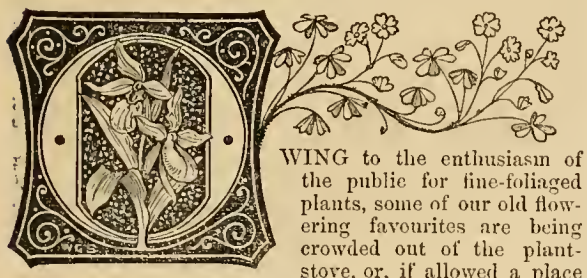
Cockroaches (*A. M. C.*).—To get rid of cockroaches in a kitchen where they swarm, we recommend you to try Chase's Beetle Poison, sold by Mr. T. Chase, Chemist, 14, Holborn Hill, London.

WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 20—26, 1867.	Average Temperature near London.			Rain in last 40 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
20	Th	Meeting of Royal and Linnean Societies.	72.4	48.6	60.5	18	44 af 3	18 af 8	10af10	53af6	18	1 8	171
21	F	Queen Victoria Proclaimed.	74.2	50.5	62.3	16	44 3	18 8	41 10	55 7	19	1 21	172
22	S	Royal Horticultural Society, Show and	73.6	49.3	61.5	16	45 3	19 8	9 11	58 8	20	1 34	173
23	Sun	1 Sunday after Trinity. [Promenade.	72.4	47.3	59.9	18	45 3	19 8	34 11	3 10	21	1 47	174
24	M	Meeting of Royal Geographical Society,	73.7	49 3	61.5	15	45 3	19 8	59 11	10 11	22	2 0	175
25	Tu	[8.30 P.M.	72.8	49.5	61.1	20	45 3	19 8	morn.	after.	☾	2 13	176
26	W	Society of Arts, Annual General Meeting [4 P.M.	73.7	49.6	61.6	20	46 3	19 8	25 0	29 1	24	2 25	177

From observations taken near London during the last forty years, the average day temperature of the week is 73.2°; and its night temperature 49.2°. The greatest heat was 93°, on the 22nd, 1846; and the lowest cold 30°, on the 20th, 1865. The greatest fall of rain was 0.72 inch.

ORNAMENTAL-FOLIAGED PLANTS, AND CULTURE OF THE GLOXINIA.



OWING to the enthusiasm of the public for fine-foliaged plants, some of our old flowering favourites are being crowded out of the plant-stove, or, if allowed a place there, are very nearly smothered by some of the recent introductions.

Now, the few remarks I will make are only intended for those having moderate-sized houses, because it is of such houses that I have had charge, and it is in them that I have picked up the measure of experience that I possess. I do not deny any merit to such plants as Alocasia metallica, A. macrorhiza variegata, and others of the same class; and what noble-looking plants we have in Sphærogyne latifolia, Cyanophyllum magnificum, and some others, but they are not adapted for small houses, and I have grieved to sacrifice such plants after growing them into specimens too large for the house.

Then we have the Caladiums: a selection may be made from them, of which the dwarfest and prettiest I know is C. argyrites, and it is suitable for the smallest house. There are, too, the Marantas, of which the best I have seen are M. Veitchii and illustris. The first-named is, I think, the finest "foliage" plant that has been as yet introduced in the class to which it belongs; and those who were privileged to see the handsome specimen exhibited by the Messrs. Veitch, of Chelsea, at the Paris Universal Exhibition in the first week in May, may well be excused if they there and then took a fancy for plants with ornamental foliage. I was sorry to see the pot in which it grew had been smashed during the journey, and the life of the plant consequently endangered.

I am a grower and admirer of some of the plants referred to, but I always contrive to arrange a goodly number of Gloxinias and Achimenes amongst them, and give all an equal share of attention. When the Gloxinias are in flower they are the chief attraction in the house.

Gloxinias are plants of easy culture, and when in flower they will well repay a little extra care bestowed on their cultivation; I will, therefore, offer a few remarks on their culture.

I will begin with propagation. They are increased from leaves, which are taken from the parent plant with a short piece of the leafstalk attached, and inserted round the sides of a 48-sized pot in a mixture of equal parts of yellow loam, turfy peat, and silver sand. A thin layer of sand may be spread over the surface of the soil before inserting the leaves; the pots are then placed on a shelf where they are shaded from the sun, and watered through a fine rose, affording a temperature of 65° or 70° at night. They must be kept moderately moist, and if the leaves stand erect and remain of a green colour they will soon form tubers. Towards the season of rest, as the foliage acquires a yellow tinge, water must be gradually withheld, and they should then be stored away in a dry place where the temperature is not under 40°. I have kept them in a vinery at rest, also in the plant-stove under the stage, laying the pots on their sides, so that the continued dripping from the plants above will not saturate the soil.

About the first week in January, after watering the pots with tepid water, they are placed on a stage along the back wall of a half-span Pine-house immediately above two rows of four-inch hot-water pipes. There is not much circulation of air there.

It is a fact worth mentioning that I have tried the plants along the front of the house where they have more air and light, but I have never found them do so well under these circumstances; so that I now prefer the back part of the house where they do not receive so much of the direct rays of the sun.

As soon as they show above ground I shake them out of the pots, and place one tuber in the centre of a 48-sized pot, the compost used being equal parts of loam, turfy peat, and well-rotted cowdung, with the addition of some broken charcoal and silver sand, which is used in larger or smaller quantities according to the nature of the soil, some soils requiring much more sand than others. If they are well treated the pots will soon be filled with roots. The plants must then be shifted into their flowering pots, using six-inch pots for the smallest and seven-inch for the largest.

As soon as they have done flowering water is gradually withheld, and when the foliage assumes a yellow tinge they are placed in their winter quarters, and treated exactly as recommended for the young plants, using larger-sized pots the second year—namely, six or seven-inch pots to begin with, and shifting into those 8 or 9 inches in diameter, according to the strength of the plants. I never use larger than nine-inch pots, and I have had Gloxinias in pots of that size with from 150 to 200 blooms expanded at one time on a single plant.

I generally grow named varieties, but it is very interesting to save seed from good sorts, I have sown the seed in February, and had the plants in fine flower the same season, numbers of them being as good as the parent.—J. Douglas.

VARIEGATED IVIES.

Now that so much attention is bestowed on various-coloured foliage, would it not be well to endeavour to increase the number of plants combining with that advantage a greater degree of hardiness than the Pelargonium possesses? Successful as cross-breeders have been in producing Pelargoniums rich in colouring and compact in habit (and no one is disposed to give them more credit than myself), still I think if the same skill and attention had been bestowed on plants of a more hardy nature we

might have obtained variegated foliage, of a more lasting character, and adapted to the requirements of the humblest cultivators.

Although success in this direction may be slow of achievement, I nevertheless hope to hear of some progress being made, What I want is simply a substitute for Golden and Silver-edged Pelargoniums that would look as well out of doors in midwinter as these do in summer; and why should we not have such a plant? Do the best Golden or Silver-edged Pelargoniums of the present day, even when at their very best, equal the Golden or Silver-edged Holly, as seen at all times, winter and summer? and why should we not have other plants as hardy as the Holly, clothed in the same golden or silver garb? I should very much like to hear that raisers of Tricolored Pelargoniums had turned their attention to effecting improvements in the Ivy. Their first efforts might prove failures, or the progress might be slow, but it has been the same in the case of other plants with which a good result has been at length attained.

Can any one trace the history of the Gold and Silver-variegated Hollies, their origin, and how they comported themselves in the earlier years of their existence? If so, something useful as regards the treatment of the Ivy might be learned. There are, it is true, Golden and Silver-leaved Ivies, but they fall far short of that clearness of colouring and constancy which the Variegated Hollies present; thus, although at the present time (the end of May), a bed of White-leaved Ivy at this place is very pretty, and a mound covered with the Yellow one is prettier still, yet neither plant retains its beauty. In winter the foliage of the White variety becomes dirty and blotched, and in that of the Golden, green is the rule, yellow the exception; and the latter is anything but clean and handsome. I have had more than one variety of each kind of variegation, but perfection is far from having been as yet attained with either.

I trust that some one will direct his attention to the subject, and that in a few years we shall possess as many varieties of Ivies as we now have of Pelargoniums; and if an equal degree of improvement can be effected in the one plant as in the other, we shall then have a plant capable of doing duty at all seasons. The Holly may be pointed out as such, why not the Ivy? The smooth glossiness of the leaves is much alike in both plants, and why should not a similar degree of variegation be produced in the Ivy to that which the Holly presents? The Japanese have done much in transforming the foliage of plants, and, no doubt, they could change that of the Ivy. There are other plants besides the Ivy, which I believe capable of being improved for bedding purposes, but its clear, bright foliage, and its convenient habit of making itself at home everywhere, and adapting itself to all forms, point it out as being one of the best to operate upon. Whoever can favour us with a Cloth of Gold, a Silver Queen, or, perhaps, a Mrs. Pollock Ivy, will deserve equal honours with those who supplied us with the Pelargoniums of the same names.—J. Robson.

USE OF A GLASS-ENCLOSED OUTSIDE VINE BORDER.

I have a lean-to vinery, south aspect, in which Black Hamburghs were begun to be forced on the 1st of February. On the outside is a border 6 feet wide, 50 feet long, covered with sashes on hinges to lift. Between the border and the vinery are portable lights, so as to remove when necessary, and render the two of equal temperature. The Vine border outside so covered I am desirous of turning to the best marketable account, if this can be done without losing in one way what we gain in another. I have thought of two plans: one to raise and bring on Strawberries in pots, and plant out on, say, 1st of October—they will probably fruit in May; and on, say, 1st of June, to plant out strong Melon plants not requiring bottom heat—they will have fruited if at all by October 1st; then top-dress and give liquid manure to balance that which the two crops may take from the soil. The other, and apparently less desirable plan, is to plant Vines after the manner of the curate's vinery. The drawbacks to this are, first, shallowness of border, being only 2 feet at back from the glass to the surface of the earth, and 1 foot in front; the difficulty in thinning without injury to the bunches; and, thirdly, the interference of the roots of one set of Vines with the other.—Old Subscriber.

[We decidedly consider that all outside Vine borders are better uncropped, or having but little in them in summer. As your outside border is only 6 feet wide, and the inside one is wide, you might dispense with the outside one altogether. As it is there, it will be to the benefit of the Vines to have it covered over with glass in the way of a pit; and as there is a means of heating that pit from the house by sliding sashes, it would do no harm to the Vines to keep Strawberry plants and other things in that pit on the surface of the border in winter and spring. For this purpose, in the way of profit, we would recommend Keens' Seedling; but we would grow the plants in pots, instead of planting them out, for several reasons, such as having them more under control, and being able at once to take out a barren plant. As to their future use, they may be planted out in the open ground, and they will bear immensely the following year; or they may stand at the back of a north wall for a couple of months, have the earth shaken away, and be repotted and grown on for the following year, when most likely they will bear a great quantity of fruit, though individually not so fine as would be procured from younger plants obtained from early layers, potted, and the pots well filled with roots before autumn. From what we stated at first, we would rather not grow Melons and Cucumbers in such a place in summer, not merely on account of the shade they would give to the ground, but for the likelihood of having fly or thrips transferred by such crops to the Vines. We have done so, however, exactly as you propose, and with good success; but, as a matter of advice, we would recommend some rough backs and fronts to receive the sashes in summer elsewhere. If the sashes could remain a few weeks over the border after the Strawberries were removed it would benefit the Vine roots. We did not gather Strawberries out of doors until the 14th of June, and therefore Strawberries might be had until they came plentifully out of doors. Strawberries at all forced go so much to leaf when planted out that we recommend pots.]

GLADIOLUSES AT FONTAINEBLEAU.

The readers of The Journal of Horticulture will have no difficulty in understanding the reason of my paying a visit to Fontainebleau. It was not the grand old château with its historic associations which brought me there, for so little did this enter into my calculations, that I went there the only day in the week on which it is closed (Monday); nor was it to see its much-talked-of forest that proved to be the attraction; though I must say, as in duty bound, that these were high considerations with some of my party to which I am bound to pay all deference; and certainly if I had taken the journey from Paris for the purpose of seeing the forest I should have felt wofully taken in. Like everything of the kind that I have seen in France, it is spoiled by its excessive regularity. Straight avenues, and central crosses from which these diverge, meet you on all sides, one as like the other as possible; while the trees themselves are allowed to grow so thickly together, that very few fine specimens are to be seen of really fine trees. In a few places there are some wilder spots—one especially, from whence you can obtain a grand view over the forest, stretching on all sides of you; but having, as I had, lively recollections of many a grandly wooded scene in old England, with its magnificent Oaks and glorious Beeches, under whose shade, like Tityrus of old, I had stretched my wearied limbs, I must confess that feelings of disappointment formed the largest ingredient in my thoughts when we had finished our drive. No, it was neither of these, but a courteous invitation from the Coryphæus of Gladioli-growers, Mons. Souchet, the *jardinier en chef* of the château, that drew me to Fontainebleau; and had I nothing to think of as the result of my visit but the truly hospitable and amiable reception we met with from him and his good wife. I should ever recollect with feelings of deepest pleasure the very pleasant day I spent with him; but when this can be supplemented with a long talk on a flower which is a favourite with us both, and which ought to be far more popular than it is, my readers will readily believe that it was a source of no little enjoyment.

Mons. Souchet grows nothing else but the Gladiolus; it is his *spécialité*, and has been for many years. Indeed the taste is hereditary, for his father, upwards of thirty years ago, turned his attention to it, and originated many fine varieties of the Ramosus section; but these have been long since left behind by the varieties raised by his son—varieties which are increasing in beauty every year, and constitute one of the greatest ornaments of our gardens in the autumn. He occupies some twenty-six acres of ground (twelve hectares), and has annually

from four to five acres under culture with the Gladiolus alone. Nor does he practise succession of crops, for he allows the portion of his land not occupied to be fallow, so that every year his roots are planted in not only fresh soil, but in soil that has rested. This soil is very light, and he does not hesitate to enrich it with considerable quantities of manure, although he believes that this may be overdone. We sometimes talk of our difficulties in the cultivation of the flower; but what are they to his? Who knows what the "ver blanc" is? Happy those who are in perfect ignorance of the pest, which is no other than the larva of the cockchafer, or May bug of our school days. This is a tremendous pest in France, especially in those parts nearest the forest. The perfect insect strips many of the trees quite bare; but the larva is the fellow for mischief. No schoolboy has a more accommodating appetite than he has. Let him once find his way into the ground, and shrubs, young trees, roots, all vanish before him as rapidly as the three-cornered tarts, jam puffs, and Bath buns do before the hungry scholars of Dotheboys Hall. As we went through the grounds of the château we passed Lilac trees, young Conifers, &c., all in a state of decay. "Ah!" said M. Souchet, "that is the 'ver blanc.'" As we were leaving him for Paris in the dusk of the evening he said, "Ah! my work is not yet done for the day. I must be off to my grounds, for I have fifty or sixty women and boys coming in to gather ce *terrible enfant*." At this time of the year it is on the wing. The female drops on the ground, and, if time is allowed her, deposits her eggs, and thus the mischief is done. Hence M. Souchet's plan is to "catch them alive" before they have time to effect their amiable object, and to destroy them. This is actually done by bushels at a time, and thus he escapes with comparative impunity.

This cockchafer grub, however, is not M. Souchet's only enemy. I observed that his bulbs were planted in very shallow trenches. Supposing this to be for the convenience of watering them, I made an observation to that effect. "Oh, no!" was his reply, "but it is to avoid the attacks of a grub which we have here; and I find that if the bulb is planted shallow it is not attacked. I afterwards, when the bulbs have well started, fill in the trenches with earth." Plague No. 2, thought I, from which we are pretty well free. I then asked him about plague No. 3, which we do know something of—the spot. This he believes to arise in a great measure from the practice of planting the bulbs in the same ground in successive years. Whether this be quite so or not I cannot say, but his lengthened experience entitles him to speak as with authority; and he assured me that he was himself very little troubled with it, attributing that to the practice of changing his ground, which he so rigidly adopts. Where bulbs are slightly affected by it there is a chance of recovery; but even then they ought to be planted in some place apart, and not in the beds. When they are deeply affected by it nothing avails, and the bulbs perish.

I asked M. Souchet with regard to the size of the bulbs, and how it affected their blooming, and found that he quite agreed with me, that the medium-sized bulbs (which indeed would be called small), gave the best blooms. Large bulbs are pretty sure to throw up several trusses, and for those who wish to propagate them this is all very well; but simply for bloom the smaller bulbs are best. He showed me, for instance, some about the size of a large Filbert. These, he said, will bloom well, and they will make beautifully symmetrical bulbs for next year. Even little "bulbules" not bigger than a Marrow-fat Pea he said would bloom; and, as I mentioned last autumn, this had been confirmed by my own experience. In some varieties this is more remarkably the case. Reine Victoria, for example, a fine white, never blooms well from a large bulb; and small ones, which a buyer would, did he not know this, invariably reject, are sure to give a satisfactory spike. There are the same idiosyncracies in these as in every other flower—some blooming early and some late, some always certain and others uncertain. Thus that noble variety Shakspeare, which was let out last year, is a very early bloomer, will always start in its dry state, and requires to be planted long before the others; while Maréchal Vaillant again, another fine sort, was so uncertain, that M. Souchet had some doubt whether at one time he would send it out. These are peculiarities which the grower of every florists' flower knows about, and which he can only know by the lessons of experience. These lessons are sometimes gained at a severe cost; they make one the more careful when they have been learned.

I found that as to varieties we had not much difference of opinion. He was exceedingly modest as to his own merits in the matter, but at the same time stated what we all know, that the best of those now grown are his productions; and he has promised to supply me with a list of those sent out by him in each year, and which I hope at some future time to lay before the readers of the Journal. On speaking to him of the defective form of some of his flowers, such as Lord Byron, he frankly acknowledged it; but then added, "But what a colour! Could I discard it?" Ad. Broigniart and Princess Marie de Cambridge, both flowers of this year, he thought very fine, and likely to be general favourites; the former for its peculiarly novel colour, and the latter for its great purity. At the same time he added he was quite astonished at the manner in which old varieties that he should long since have discarded are still inquired after: possibly their cheapness is the cause of this. I should, however, state that M. Souchet does not himself sell his bulbs. They are supplied by him to five Paris houses—Messrs. Vilmorin, Andrieux, et Cie., Quai de la Mégisserie; Messrs. Thibaut et Keteleer, Rue de Charonne; Mons. Charles Verdier, Rue de Marché aux Chevaux; Mons. Eugène Verdier, Rue Dunois; and Mons. Loise, Quai de la Mégisserie; and English buyers can deal directly with these houses.

Many of the readers of the Journal will doubtless be visiting Paris this summer. I would advise any lovers of the Gladiolus, if they possibly can, to make their's about the middle of August, and take a day at Fontainebleau. I was requested by Mons. Souchet to say that he should be most happy to show his collection to any amateur at that time; but I must at the same time warn them that they must be prepared to speak with him in his own language, for neither he nor his amiable wife understands a word of English, and I can assure them that they will meet with a kindness of reception which cannot be excelled even in the wide and generous hospitality of the Emerald Isle.—D., *Deal*.

DUTY-FREE TOBACCO.

I am obliged by Mr. Tafe's courteous notice of my inquiries on this subject. In common with all cultivators of flowers, I hail the boon which he announces as a kind and graceful concession from the Government. There are, however, one or two further points on which, as an amateur gardener, I solicit information. Perhaps Mr. Tafe will be so good as to assure us.

The advertisement speaks of the prepared tobacco, "either as a powder, or . . . . as a wash;" but are we limited to these two modes of application? I fear neither would be of much avail for houses in which costly and delicate plants are grown. Who would powder his flowering plants with snuff, or syringe them with tobacco water? And the anointing of each leaf and twig with a sponge or brush is hopelessly tedious. Presuming, however, that the powder can be burned on an iron plate, or on coals, for fumigation—the only mode likely to be of much use for plant-houses—an important question arises from the presence of the sulphur. The fumes of burning sulphur are fatal to plants, unless applied with extreme caution. Is the proportional amount of sulphur in a given quantity of the new powder so small as to permit the mixture to be burned in a plant-house without danger? We need to have distinct assurances on this point before we can expose our valuable plants to risk. If it prove that there is no danger on this score, then it seems probable that the coarser form advertised for agriculturists, at 28*s.* per cwt., would be the most suitable for fumigation, unless there is some latent objection. All this we shall be glad to know.—P. H. Gosse, F.R.S., *Torquay*.

That the public is now enabled to obtain ground tobacco free of duty, is owing solely to the exertions of the inventor of the "Ground and Cylinder Vineries."—Observer.

The Recent Frost.—I was fishing a few days since in the Bray, which runs through one of the most warm and sheltered valleys in our usually genial climate (Barnstaple). I was amazed and grieved at the melancholy appearance of the woods which clothe the hill sides. The Oak coppices appeared as if a fire had passed over them, the leaves brown, the young shoots quite killed. The shoots of the Ash were as much damaged; the Alder shoots not quite so much injured. The only vegetation that appeared to have entirely escaped injury was the Hazel and Mountain Ash. Ferns of all sorts were cut down and brown as in winter, and in some places the Gorse was entirely killed. The damage to the growing woods and

coppices will be very great, they will scarcely recover this year. A cold north-west wind and frosty mornings have almost cleared our Pear crop. Apples will be much better. Plums, and wall fruit generally, though well set, have dropped off.—J. M. M.

ROYAL HORTICULTURAL SOCIETY.

Weekly Show, *June 15th.*—Though several prizes were offered, only one exhibitor put in an appearance—namely, Mr. A. Wilkie, gardener, Oak Lodge, Addison Road, Kensington. A third prize was awarded him for a collection of cut Roses, and he received three extra prizes for six Fuchsias, six Pelargoniums, and a collection of miscellaneous plants. A collection of Gloxinias, Begonias, Pelargoniums, &c., from the gardens of the Society at Chiswick, made up a small but interesting exhibition.

Floral Committee, *June 18th.*—Among other plants exhibited on this occasion, a single flower of a seedling Cactus, sent by Mrs. Merrick, was brought before the Committee, but it proved to be in no way distinct from known varieties. Messrs. Downie, Laird, & Laing received a second-class certificate for Nosegay Pelargonium Floribundum, and a similar award for Nosegay Pelargonium Right Hon. G. Hardy, both plants producing fine trusses, but not very distinct from or better than many others. The same firm also sent Nosegay Comet, a promising variety with a compact truss; and a Fancy Pelargonium called Mr. J. W. Todd. Mr. J. Davidson, Highfield Park, Hants, exhibited Pelargonium Emily, not equal to Rose Queen, &c., and three specimens of variegated Laurels, very faintly variegated, and by no means an improvement as regards the foliage. Messrs. Osborn sent a group of plants, among them one well known but rarely seen, Gordonia javanica. It was deservedly much admired, and was awarded a special certificate. Mr. Lee, Albion Road, Hammersmith, sent a seedling Lobelia named Lee's Dwarf Blue, very compact in habit, distinct in colour, and a decidedly useful plant. It received a first-class certificate. Lobelia Fawn, pale lavender; and Lobelia Ultramarine, came from the same exhibitor. Mr. Shortt, gardener to Viscount Eversley, Heckfield, exhibited a cut specimen of Pentstemon Cobœa vera, a very handsome form, with large white flowers deeply veined; and Ruscus aculeatus, covered with berries, as standard plants for table decoration; the berries had been produced by careful impregnation.

Messrs. J. & C. Lee sent seedling Lobelia Sparkler, Hypericum (chinense) monogynum, and Carex pilulifera var. aurea. Mr. Bull exhibited a specimen of Drosera filiforme, a curious plant; likewise a collection of Cypripediums, Bertolonias, Podocarpus, &c., for which a special certificate was awarded. Mr. John Parker, gardener to S. G. Cooper, Esq., brought a variegated form of Lobelia speciosa, which appeared to be L. speciosa spoiled. Mr. Whitehorn sent several seedling Pelargoniums—Purity and Pauline, show flowers; and Purple King, a beautiful form of Rollisson's Unique, which might be much more appropriately named Crimson King. This plant we hope to see shown again; it is very distinct, and will be useful.

Mr. Mann, Brentwood, sent some good seedling Zonal Pelargoniums, but the specimens were too small to allow of judgment being passed upon them. A Nosegay called Novelty well deserved its name, but it was quite useless. Nosegay The Baron; Guardsman, a promising Zonal light orange, &c., were also shown by Mr. Mann; as well as Zonal Startler, Christabel, Bridesmaid, and North Star, a bright scarlet. These plants we hope to see again in better condition: the specimens were too young and too small for any fair decision as to merit. Mr. Tirebuck, Luton Nursery, sent several seedling Zonal Pelargoniums, but none of them new or distinct. Richard Keely, with bright yellow foliage, was the most distinct, and may prove useful. Crimson Cushion and eight others were of no use, not being distinct from known varieties. Mr. Kimberley exhibited a spotted seedling Show Pelargonium, Grand Arab.

Messrs. Veitch sent Dendrobium Bensoniæ, sweet-scented, which received a first-class certificate; also Dendrobium species, with small insignificant flowers. Mr. R. Warner received a special certificate for a very fine collection of cut specimens of Orchids. Mr. Sherratt, gardener to James Bateman, Esq., Knypersley, was awarded a first-class certificate for Miltonia spectabilis var. rosea, a very beautiful plant. Mr. Anderson, gardener to T. Dawson, Esq., Meadow Bank, Uddingstone, near Glasgow, received a first-class certificate for a beautiful new Odontoglossum, called roseum; and Lord Egerton of Tatton received a special certificate for a very superb spike of Aërides Fieldingii. This was a marvellous specimen, having eight branches besides the central spike of flowers. So unusually fine was this specimen that the Committee recommended it for the Lindley medal, which the Council most readily granted. W. W. Buller, Esq., exhibited Odontoglossum flavescens, for which a second-class certificate was awarded. A small collection of Orchids was sent from the Society's gardens, also some seedling Caladiums; some of the latter, being of great promise, will be sent to the Committee again, when they will, without doubt, receive their proper award.

Fruit Committee.—Mr. Tillery, of Welbeck, sent three dishes of Strawberries grown under glass. They were fine specimens, and Mr. Tillery stated in a letter that he had been gathering fruit of the same size and quality ever since the beginning of May. The plants were grown in pots only 5 inches wide and 6 inches deep, and the fruit was thinned out so that each plant carried only two fruits. They were stood on shelves, which held about half an inch of soot water. The sorts were Ingram's Prince of Wales, Empress Eugénie, both excellent in flavour, and Reeves's Eclipse, which was not so rich. The Committee awarded them a special certificate. Messrs. J. & C. Lee, of Hammersmith, exhibited fruit of "The Lady" Strawberry. The fruit was large, but being not ripe had no flavour. Plants were also exhibited which shewed the highly prolific character of this variety.

Messrs. Wood & Ingram sent specimens of the fruit of a small oblate Apple veined with russet, which appears to be Grange Apple, and which was perfectly sound, and of good quality.

Mr. Shortt, gardener to Lord Eversley, of Heckfield, sent a fruit of Passiflora quadrangularis under the name of macrocarpa. It was of large size, and weighed 3 lbs. 9 ozs., but was not ripe. Mr. Shortt also sent specimens of a hybrid Melon called Golden Eversley, which, however, was overripe, and the flavour flat. He also sent four varieties of early Potatoes—viz., Paterson's Early Red Kidney, Early Handsworth, Rivera's Royal Kidney, and Old Ashleaf Kidney, all of which were planted on the 6th of March in the open ground, and the tubers exhibited of each were ten of the largest, selected from three plants. James Bateman, Esq., of Knypersley, sent a dish of forced Peaches.

Several dishes of Strawberries were sent from the Society's Garden at Chiswick, among which the best-flavoured were President, Sir Joseph Paxton, and Napoleon III. Prince Imperial was highly flavoured with a fine aroma; Souvenir de Kieff is a large conical Strawberry, solid flesh, and with a fine brisk decided flavour; La Constante was firm, solid, and with a fine flavour.

General Meeting.—Sir Roderick I. Murchison, Bart., in the chair. After five new Fellows had been elected, and the Llangynwyd Cottage Garden Society, Merthyr Tydvil Floral and Horticultural Society, and Newport (Salop) Floral and Horticultural Society had been admitted into union with the Society, Mr. Shortt offered a few remarks on Passiflora "macrocarpa," which he stated to be of Brazilian origin, and considered different from P. quadrangularis, for which it had been taken. The plant on which the fruit exhibited was produced was not ten months old, and any one who could give moderate heat and moisture could grow it in an eight-inch pot. He himself had plants in flower in five and six-inch pots. Mr. Shortt concluded by remarking that the splendid Tacsonia Van-Volxemi also produces edible fruit.

The Rev. M. J. Berkeley said that with the exception of the Orchids there were few plants that required any observation. The first to which he would direct notice was Gordonia javanica, belonging to the same natural order as the Tea plant. Gordonias were bog plants, and in North America their bark was extensively used for tanning. Mr. Shortt's fruiting specimens of Butcher's Broom next claimed attention, and their ornamental appearance for dinner-table decoration was pointed out. The plant, however, being dicœcious, it was difficult to fruit it except by artificial impregnation, as Mr. Shortt had done. After noticing Limnanthes Douglasii, as a very pretty spring bedding plant if sown in autumn, Mr. Berkeley directed attention to a beautiful specimen of a fasciated Pinus Pinaster, in which the lower part was spirally twisted, and bore normal cones, while the subordinate upper branches were fasciated. Abnormal pressure in the bud, he remarked, would not account for this example of fasciation. Though so much had lately been said about the foliage of Zonal Pelargoniums, he would venture to make a few more remarks on the subject. A doubt had been expressed whether it was possible for a white ground to become pink; but he exhibited two leaves of the same variety, L'Elegante, shown by Mr. Ball, the one with white, the other with pink edges, the result, he believed, solely of different treatment, the plant in the former case being subjected to ordinary treatment, and in the latter kept dry and near the light. Another curious subject for investigation was the appearance of the leaves of a hybrid between the common Zonal and the Ivy-leaved Pelargonium, and in which the upper part of the leaf partakes of the Zonal character, whilst the lower part has that of the Ivy-leaved Pelargonium, and the flowers are partly those of the Zonal, partly of the Ivy-leaved parent. This case could not be accounted for in the same way as the production of Cytisus Adami, by cell-grafting, and tended to show that the theory which had been formed respecting it was entirely wrong; at the same time the mode of action of the pollen on the embryo sac was not known. Schleiden supposed that the end of the pollen-tube entered the embryo sac and became a new plant; but, probably, the action of endosmose and exosmose would account for the passage of the pollen influence into the sac; the subject, however, was one of those mysteries which at present we are unable to explain. Passing to another subject, Mr. Berkeley said that about a month ago he was in the grounds of Sir Frederick Pollock, at Hatton, near Hounslow, and observed that four plants of Cupressus macrocarpa, once the pride of the garden, had perished. On examining them he found that the whole of the plant was covered with the spores of a fungus (Pestalozzia funerea), which under the microscope formed one of the most beautiful objects he had ever seen. Some years ago the Camellias in one of the principal nurseries near Canterbury were devastated by an allied species of fungus, originally discovered in France by M. Dupin.

Mr. Bateman said, that though all knew the splendid specimens of

Orchids which Mr. Anderson, Mr. Dawson's gardener at Meadow Bank, was in the habit of exhibiting from time to time, yet he had never sent finer than those which he had exhibited on this occasion. Beautiful as his bunch of Odontoglossum Pescatorei was, it only represented a fraction of the blossom on the plant from which it was cut, and on which no less than three hundred flowers were counted; but, glorious as Mr. Anderson's Odontoglossum was, even it was surpassed by the cut specimen of Aërides Fieldingii, from Lord Egerton of Tatton, which was the most magnificent example of that species which had ever been exhibited, and to which, on the recommendation of the Floral Committee, the Lindley medal had been awarded Mr. Bateman then noticed two or three small specimens of Orchids, and especially the little Peruvian Odontoglossum roseum, which, though beautiful *in miniuis*, would present a still more glorious appearance when larger specimens were obtained. Miltonia spectabilis, of which his own gardener had sent a fine variety called rosea, was also mentioned as having been obtained through Messrs. Low; likewise Epidendrum vitellinum, from Mr. Anderson, which was figured twenty-five years ago by Dr. Lindley, from dried specimens, but when the plant was flowered some years later by Mr. Barker, every one considered the drawing exaggerated, so poor were the blossoms then; but now that the cultivation of the plant, which comes from an elevation of 7-8000 feet, is conducted on the cool—that is, sensible—mode of treatment, the original representation utterly failed to do justice to its beauty. Beautiful, however, as Mr. Anderson's example of this Epidendrum was, Mr. Bateman said he had seen one far superior a day or two before at Mr. Day's, at Tottenham.

Coming now to the immediate subject of his lecture, Lælia majalis or Flor de Mayo, it was one of the few Orchids which was fortunate in having a history as well as a name—in fact, many names, the native one being Itzamaquee; besides which it had two or three Spanish, and three or four Latin names. It was all very well for old Rumphius to say that the Orchids are the aristocrats of the vegetable kingdom, but not one in a hundred of them had ever been heard of before the present century, and in classical or heroic ages they were unknown. No one, not even the Chairman, had ever found a fossil Orchid. Any Orchid, even, whose history could be traced back to the conquest—of America he meant—would hold a distinguished place. It had been said that when the French took possession of a settlement the first thing they did was to establish a *café*, and in a like manner the Spaniards were in the custom of erecting a church. For the elaborate services of these churches the Spaniards, being ignorant of the resources of their new possessions, at first carried with them their old-world flowers; but they soon discovered the value of Orchids for church decoration. In connection with this part of the subject he might mention that his old friend Mr. Skinner had sent home from Guatemala some bulbs which proved to be no other than those of the common white Lily, which had doubtless been taken out for the very purpose, and had run wild. The value of Orchids for church decoration having been discovered, as before remarked, they were largely employed for the purpose; and the names of the saints' days and festivals for which they were suitable were applied to them, and of these Mr. Batemen cited a number, of which "Flor de Mayo" was one. Knowing the extensive use of Orchids in church decoration, Mr. Skinner, he might remark, when he wanted to know what Orchids were in season, always went to church to look at the altar decorations. To proceed with the history of Lælia majalis, the first naturalist who went to Mexico was Hernandez, who published in 1648, at Rome, a book, in the frontispiece of which two Orchids were represented, one of which was the beautiful Lælia majalis. Humboldt was the next to notice it under the name of Bletia speciosa, as one of those beautiful Orchids the recollection of which no time could efface. About the same time Lexarza, who went out to Mexico, failing to recognise the plant as described by Humboldt, called it Bletia grandiflora. His description of this and other Orchids so impressed the youthful Reichenbach, that he wanted to visit Mexico himself; but this proved unnecessary, for Mr. Barker dispatched a traveller thither, who sent a number of plants, which, arriving in midwinter, were sent home in blankets, but they never flowered. Next M. Deschamps, in 1837, exactly thirty years ago, brought home a cartload, for which he asked enormous prices, and eventually he was glad to sell the plants at a cheap rate; but they all disappeared without flowering, except one, which was purchased by Mr. Dillwyn Llewelyn, and which was figured in Mr. Bateman's work on the Orchids of Mexico and Guatemala, and by Dr. Lindley in the "Botanical Register," 1844. The drawing in the former work was made under Dr. Lindley's direction, who thought the plant produced four or five flowers; but never, except under exceptional circumstances, did it produce more than two on a scape. Just as Humboldt failed to make his description of the plant intelligible to Lexarza, so the latter to Lindley, who called the plant first Lælia Grahami, and afterwards L. majalis, and though Reichenbach wishes to go back to L. speciosa, Lælia majalis it is to cultivators, and so it ever will be.

Mr. Bateman then mentioned that Mr. Anderson had communicated to him his treatment of the plant, which differs materially from that pursued by Messrs. Backhouse, as stated also to him (Mr. Bateman), in a letter from his friend Mr. Wentworth Buller. Mr. Anderson grows the plant in a kind of Wardian case, where the temperature rises by sun in the day to 80°, but is cool at night and in winter. Mr. Buller, on the other hand, states that it is kept by Messrs. Backhouse in a house where the temperature in winter ranges from 45° to 53°, and sometimes falls as low as 37°, no fire heat being given unless the temperature declines below 40°. Abundant ventilation is likewise afforded, the ventilators being opened at night when the external temperature permits. In the same house was growing Epidendrum ernbescens, likewise figured in Mr. Bateman's superb work, and far surpassing any plants of the species which Mr. Buller had seen elsewhere. Mr. Bateman, in concluding, then remarked that success in the cultivation of the latter plant and of the Lælia would appear rather to depend on abundance of air kept moving than on temperature.

The Chairman, in returning Mr. Bateman the thanks of the meeting for his interesting remarks, said that though a fossil Orchid had never yet been discovered, he would endeavour to stimulate geologists to search after such.

Mr. Bateman, in replying, asked to be allowed to add an observation which he had omitted to make at the proper time—namely, that some of the Orchids which Mr. Anderson had sent were growing on flat tiles.

ROYAL BOTANIC SOCIETY'S SHOW.

At the second great Show of this Society, held yesterday, there was again an excellent display of stove and greenhouse flowering and fine-foliaged plants, many of which were in greater perfection than on the last occasion. Pelargoniums and other florists' flowers were also numerously exhibited; and of Fuchsias we have rarely seen finer than some of the plants shown by Mr. Brockwell and others. Large and most interesting collections of new plants came from Messrs. Veitch, Mr. Bull, and others. Orchids were fairly represented, though not so numerous as we have seen them in former years. Among fruit there were numerous and well-ripened bunches of Black Hamburgh Grapes, fine bunches of Black Prince from Mr. Meads, gardener to Raikes Carrie, Esq., Minley Manor; some very good Providence Pines, excellent Peaches, Nectarines, and Strawberries.

CHELTENHAM HORTICULTURAL SHOW.

(From a Correspondent.)

The Cheltenham Horticultural Society's second Show for the season was held on the 12th of June in the beautiful grounds of Pittville Spa, and the afternoon being fine attracted a numerous concourse of visitors.

The collections of ornamental-foliaged plants, grouped for effect, exhibited by T. P. W. Butt, Esq., and Mr. Heath, were particularly worthy of remark, as were the stove and greenhouse plants from Mr. Butt and Mr. Cypher. Fine collections of British Ferns were shown by Sir Alexander Ramsay, Bart., and Mr. Pilgrim; and of Pelargoniums by Mr. Hopwood, Miss Douglas, and Mr. Heath. There was a severe competition in vases of cut flowers, arranged in threes for the dinner table; those shown by Lady Ramsay, Rev. W. Coventry, Capt. Fickell, G. Loutheau, Esq., and Mr. Cypher being exceedingly elegant and artistic in their arrangement. Cut Roses received their full share of attention, and were well shown. The boxes contributed by Mr. C. Brydges, the Rev. W. Coventry, and T. W. Potter, Esq., were particularly good.

The Show of vegetables was unusually good. Cauliflower, Asparagus, Peas, Kidney Beans, new Potatoes, Mushrooms, and baskets of Salad were excellent. The last were tastefully designed, well arranged and well filled. That from Mr. E. Smith was surprisingly good.

The show of fruit was not so good as in former years, although there were some fine dishes of Grapes, Peaches, Strawberries, Cherries, and Melons.

ROSES INJURED BY FROST.

"E. H.'s" case is, I believe, not a solitary one, as I have observed something of the kind here (Staplehurst), though my Roses have suffered but little from frost, almost my whole stock being dwarfs on their own roots, and many of them plants eight or ten years old. Except that they have suffered a little at the tips during the severe frost of January, I see no difference in their appearance this season from that which they exhibit in other years; they seem to bloom quite as strongly and as freely. This remark refers more particularly to the Hybrid Perpetuals. The damage done to the China varieties was more severe; but not a plant has been killed, and they are blooming as well as before, having only received a more severe pruning than usual. Of Tea Roses I have not many; but I find two plants against a south-west wall have been injured. On one of them the shoots, appearing to be still alive, were left at the usual pruning time in March, and started into life; but since then portions have died back, and the plant is far from healthy.

The above is the only case of a plant having been more injured by the frost than it at first appeared to be; while, on the contrary, many subjects that were pronounced by fair judges dead, are breaking out in different portions of their branches, as Bays, Laurustinus, Majorca Box, Euonymus, and some Conifers. These have never been meddled with, as I am not an advocate for cutting down if it can be avoided. A fine bushy tree of

Pinus insignis, upwards of 40 feet high, was quite red, and, on examination, its twigs showed what appeared to be hopeless deadness in its pith, as "E. H." describes in his Roses; yet the tips seem to have escaped destruction, as it is pushing out green all over; and although it will not be so handsome for a year or two, I hope it will do good service yet. Some other plants, such as Phillyreas, exhibited similar injury, and are likewise recovering, the tips of the last year's wood being in most cases all that are really lost; but why should these plants have shown greater injury than they have received, whilst, on the contrary, the Rose in question was more hurt than it really seemed to be, as so many shoots have died since the tree started into growth?

I may add that two old standard Gloire de Dijon Tea Roses are quite uninjured, although growing close to where Laurustinus was much damaged. Trailing Roses have suffered only a little; yet some of them, in the way of the one alluded to, and a plant of Jasminum nudiflorum, growing against a pillar in a very cold and exposed place, has been killed to the ground, but is starting again. I find that in the open ground Leycesteria formosa and Phygelius capensis are both killed to the snow line, and a plant of the latter against a wall has suffered a like fate; but as neither of them presents so hard and firm a woody stem as most shrubs, their being injured need not be wondered at. I hear of several Evergreen Oaks, thought to be dead, coming to life again. After all, we must not complain too much if some of our Roses suffer more than could be wished, as the total number of subjects absolutely lost is much less than was at one time thought to be the case.—J. R.

PYRETHRUMS AND PÆONIES AT VERSAILLES NURSERY, HAMMERSMITH.

The Messrs. Salters' collection of these very magnificent flowers is now in perfection, and all persons interested in horticulture would do well to avail themselves of an opportunity of visiting this nursery.

It is very interesting to see the progress, by cultivation, made in the Pyrethrum. From a single white flower double varieties have been raised, varying in colour from the deepest carmine rose to pure white; the flowers are perfect in form, and the foliage of the plants elegant. They must be seen to form any correct notion of their beauty; and grown as they are by the Messrs. Salter in large beds, the effect is quite startling.

Of the Chinese Pæonies too much cannot be said. They are gorgeous in colour, and yet exquisitely delicate. Some of the light varieties are sweetly scented, and the flowers standing up among the dark rich foliage make them very conspicuous. It is most remarkable that these hardy and useful plants are not more generally cultivated. No one should leave the gardens without inspecting a novel and beautiful design in the application of some of the low-growing Sedums.

Mr. Alfred Salter has been most successful, and exhibited great taste in the use he has made of these plants. The uneven surface is completely carpeted with various shades of colour, in which small groups of Cacti and other succulent plants are most judiciously introduced. This arrangement of these peculiar plants is most effective and novel. There is little doubt but that the idea will be followed out by many amateurs. The collection of Zonal Pelargoniums is very interesting, and some of the finest varieties both English and foreign are to be seen. One remarkable feature in the greenhouses is the total absence of Variegated or Versicolor Pelargoniums, when the finest collection in England of variegated plants is distributed all over the grounds.—J. D.

INFLUENCE OF THE GRAFT ON THE STOCK.

It has been a mooted question for years whether the graft exerts any influence on the stock, and if so, how much? The judgment of observers is not unanimous, the most part urging that there is no influence whatever. The stock has an influence on the graft, however, as the process of dwarfing demonstrates. A fast grower does not develope itself with nearly so much vigour on a weak-growing stock as on a fast one. This, indeed, is the philosophy of dwarf fruit-tree culture. Now, as it is a pretty well known fact that in almost all the active forces of nature two forces can scarcely combine without mutual influence on each other, we might almost expect some difference in the stock by the influence of the graft, as well as to find the graft influenced by the stock.

Experiments have often been made to test this matter, but little evidence has been collected in favour of the graft's influence. Muscat Grapes grafted on Hamburghs still produce Muscat Grapes—and the upper half of a White Beet has been grafted on a Red one when young, and the line of red and white has been preserved through the whole life of the Beet; and we believe a great many similar experiments with other things have resulted in the same way. Yet we see things sometimes that scarcely admit of explanation in our present state of knowledge, that would indicate that some mutual influence is probable as well as possible.

If we take two Quince stocks of equal strength and vigour, grow them as nearly as may be in similar circumstances, and graft on one a strong-growing variety of Pear, and on the other a weak variety, we find the Quince stock on the fast-growing Pear growing faster than the stock of the weak-growing Pear; and, indeed, we can get wood of a Quince on which a Pear has been grafted much thicker than any Quince would ever grow in the same time. So far as growth is concerned, then, the Pear graft has an influence; and if there is an influence in one point why may there not be in some others?

We have noticed another instance where an influence on the stock was perceptible. A tree of White Doyenné Pear, which had borne nothing but worthless cracked fruit for years, had, three years ago, all its upper branches grafted with Bartletts, and the lower branches of the White Doyenné were suffered to remain. The growth of the Bartletts has been very strong, and their strength has been evidently communicated to the stock for several inches below the point of union. On one of these branches a sprout of the Butter Pear, growing just below the point of union, had been overlooked in the grafting, and the shoots bore last year clean perfect fruit, all the rest of the tree being cracked and worthless as heretofore. The most probable influence in accounting for this is, that this shoot had received its conditions of health from the Bartlett shoot above it.

That there is really a downward influence of some kind in plants is shown by occasional circumstances which vegetable physiologists stow away in their cabinets of curiosities. Some years ago the late Mr. William Reid, of Elizabeth, New Jersey, showed some variegated Willows which he had grafted on some plain-leaved varieties, and the variegations were pushing out all down the sides of the stock below the grafts. We do not remember whether the stem variegations were of the same varieties as the stem or the stock, which would be very interesting to know; but we have a note from Mr. J. Stough, which shows that the influence downwards does carry with it the identity of the graft. He has a Mountain Ash on which is grafted, 3 feet from the ground, a Bartlett Pear; last year, 6 inches below the graft, a Pear sprout came out which is now 7 inches long, and there are Mountain Ash sprouts above and below this Pear sprout. Mr. Stough takes great pride in preserving this curiosity, as well he may. He informs us that he once had a Rose Acacia (Robinia hispida), grafted on the Black Locust (R. pseud-acacia), which pushed out Rose Acacia sprouts from the stem which tried to bear Rose Acacia flowers, in every respect the shoots being as the grafts above it.

These are all very interesting facts, and have considerable bearing on the influence of the graft on the stock.—(*American Gardener's Monthly.*)

WOODSEAT,

The Residence of Colin M. Campbell, Esq.

Woodseat is situated on a gentle eminence near the confluence of the Dove and the Churnet on the eastern boundary of Staffordshire, about four miles north of Uttoxeter, and half a mile from the Rocester station on the Churnet Valley Railway.

The mansion, built in the Italian style of architecture, is a structure of considerable pretensions, and is surrounded by picturesque scenery. The interior is elaborately decorated, and possesses every advantage for domestic comfort and convenience.

The principal entrance is on the north-east side of the mansion. The carriage-drive passes between sloping banks of diversified outline, but properly speaking, I believe, through a deep cutting, though very natural in its appearance; and large clumps of choice evergreens are judiciously arranged on each side. It terminates in a large open courtyard, encircled with a low panelled brick wall, surmounted by ornamental masonry.

The exotic fernery is situated at the north-east corner of the mansion, and communicates with the billiard and other rooms.

It is like a huge cavity hewn out of a solid rock. The walls are formed of a kind of rugged stone adapted for rockwork, called tufa, brought from Matlock, in Derbyshire. This is a loose and porous kind of stone, formed by depositions from springs usually calcareous, but becoming harder on being exposed to the air. In the arrangement of this house a natural appearance has been successfully combined with effect—here bold pieces of rock clothed with Lycopods or Ferns jut out; there we find a recess overshadowed with the fronds of various Ferns; and in another place the projecting rock forms an arch, from beneath which gushes a stream of water that makes its exit by a subterranean passage. Among the Ferns which find a congenial abode among the crevices of the rockwork, and in nooks overhung by higher portions of rock, may be mentioned Neottopteris vulgaris, or the Bird's-nest Fern; Asplenium Veitchii, a plant of exquisite beauty; A. cicutarium, Didymochlæna truncatula, Adiantum formosum, Lastrea decomposita, Davallia dissecta, D. canariensis, or the Hare's-foot Fern, &c. Associated with the Ferns are a few other plants which naturally delight in the same situation, such as Ficus repens trailing over the stones, and creeping by the side of the rocky streamlet; Dioscorea discolor, Selaginella Wildenovii, S. flexuosa, S. cæsia, Calla æthiopica, and a few other ornamental plants with fine foliage.

The conservatory is at the south-west corner of the mansion, and is in communication with the dining-room, and other apartments. It forms a triangle, two sides of which are 36 feet in length, and it is 20 feet wide at the base. In the borders there was a fine collection of vigorous Camellias, with luxuriant dark green foliage, some in bloom, and others just bursting into flower. I also noticed Epacrises, Monochætum ensiferum, and a large stock of Linum trigynum, covered with a mass of bloom. It would be instructive to the readers of this Journal if Mr. Rawbone, the head gardener, would record in its pages the mode of treatment by which he flowers the plant in such perfection at midwinter. The gorgeous Camellias in the background, and the Linums, interspersed with Poinsettias and other gay-flowering plants, rendered the conservatory as brilliant at the time of my visit (December 20th), as other conservatories generally are in summer.

There is a range of houses near the conservatory, and on proceeding from the latter, the first is a greenhouse 30 feet long by 18 feet wide, well filled with healthy plants of Eriostemons, Polygalas, the much-neglected yet beautiful Correas, and huge plants of Azaleas, 6 to 8 feet high, trained in the pyramidal form with the utmost exactness. Among the sorts cultivated were Sir H. Havelock, Chelsoni, Criterion, Brilliant, Imperialis, Virginalis, Le Lion de Flandres, President, and Amœna, the last the most useful of all for early forcing purposes.

The second house is the early vinery, which had been just started; the wood was in excellent condition. It is 31 feet long by 17 feet wide, and is planted with Black Hamburgh, Buckland Sweetwater, and Golden Hamburgh.

We next enter the Peach-house, 40 feet long and 17 feet wide. The trees are trained under the roof to two trellises, one row of dwarfs in the front, and a row of standards behind. In the cultivation of the Peach and Nectarine, as well as of the Vine, Mr. Rawbone seems to develope no ordinary amount of skill. It was partly from this house and the early vinery, that the collection of fruit came which took the first prize at the Royal Botanic Society's Show last July. A superficial observer might almost mistake the Peach trees for Lord Suffield Apple trees, the short-jointed sturdy wood, and the bold prominent buds with which the trees were covered, more resembled those of the Apple tree than of the ordinary Peach. The borders, which are 3½ feet deep, rest upon 2 feet of drainage. Mr. Rawbone uses a rather adhesive soil—a very strong turf—with not a particle of manure, a quantity of rough lime rubbish being intermixed with it, and the whole very firmly trodden down. Last autumn he had occasion to root-prune two young trees that were growing too luxuriantly, and so firm was the border, that he was obliged to use a pick to remove the soil from about the roots.

The last house in the range is a late vinery of the same dimensions as the first, and the varieties grown were Lady Downe's, Alicante (Meredith's variety), White Tokay, Muscat of Alexandria, Trebbiano, and Black Hamburgh. There is one set of Vines planted in front, another along the middle of the house, trained to the pillars that support the roof, and a third against the back wall. The last during the past season bore fruit within a few inches of the ground. When I saw the Vines the fruit was all gathered, and notwithstanding the fine fruit and heavy bunches that had been grown during the last season, they promised to do equally well in future. I can give no conception of the strength and size of the Vines, though they have only been planted three years. With fruit from them Mr. Rawbone took the first prize for Trebbiano and Alicante, and the second for Muscats, at Liverpool, in the autumn of 1865, and last November he also took the first prize for Alicante, and a like award for Trebbiano, at the same place. The two bunches of Black Alicante weighed 9 lbs., and the two bunches of Trebbiano 11½ lbs. The latter were said to be the finest Grapes ever exhibited at Liverpool.

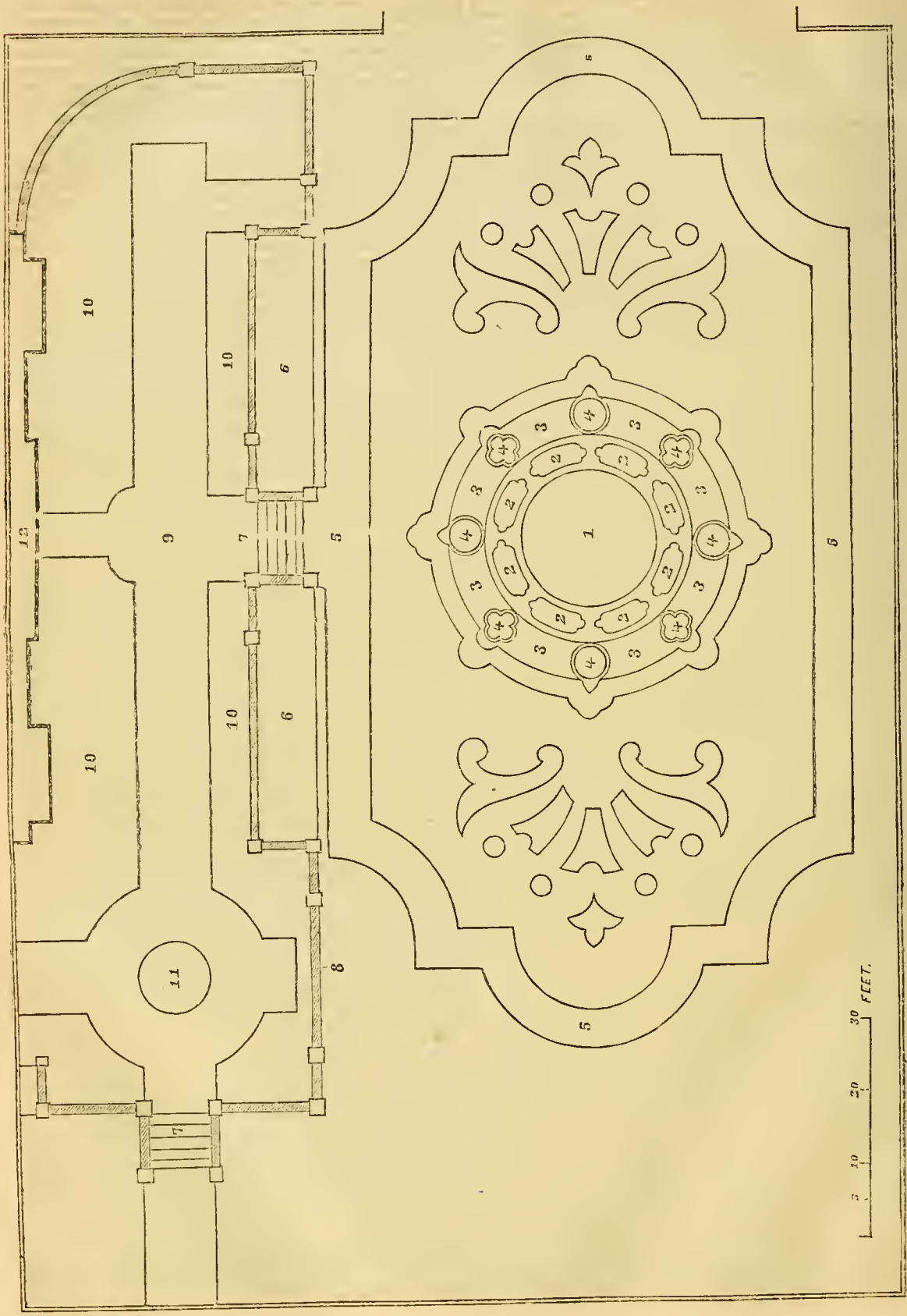
As there has been such a prolonged contest in these pages as to the formation of Vine-borders, I will state the manner in which those at Woodseat are formed. If I remember aright, the borders are raised considerably above the general level. There is in the first place a depth of 2 feet of drainage, consisting of broken bricks and rough lime rubbish left quite open, with drain-pipes underneath, and the bottom concreted. The surface of this lower stratum of drainage is also concreted, and drain-pipes are laid on the concrete, on this another foot of rough mortar rubbish, and then the border, 3½ feet deep, composed of turf thinly pared from an old pasture, a little horse-manure, and a good proportion of old plaster, brick rubbish, and broken bones. The borders are 17 feet wide inside, and 8 feet wide on the outside. Seven feet in width of the inside border is devoted to the Vines on the back wall, and the remaining 10 feet to those planted in the front. Mr. Rawbone practises the bit-by-bit system of border-making, which is so frequently recommended in this Journal. The inside borders were made first, and the roots had well filled and permeated the whole of the inside mass before the outside borders were added. The same attention has been paid to drainage on the outside as within. The outside border is 6 inches lower at the back than the inside border, and gradually slopes towards the front.

The next house we enter, for Pines and stove plants, is 50 feet long and 17 wide, with a narrow path along the centre. The front part is entirely devoted to Pines, some just pushing into fruit, and others for succession. They looked remarkably healthy, and were particularly distinguished for thick, sturdy, compact foliage, rather than lanky leaves, many not being more than 2 feet long. The back part of the house was filled with stove plants, fine examples of health and vigour. Among the most conspicuous were Sphærogyne latifolia, a very beautiful specimen; Cyperus alternifolius variegatus; Rivina humilis, covered with a profusion of crimson berries, a most useful plant during winter for dinner-table decoration and for conservatory embellishment; Dipladenia amabilis; Bougainvillæa glabra; Eucharis amazonica, smothered with masses of pure white blossoms; Begonia carnea, a well-known favourite; Ixora javanica, very fine; I. acuminata, I. salicifolia, Dracæna ferrea, D. Cooperi, and D. terminalis, intermixed with huge Crotons of various sorts, Alocasias, Thyrsacanthus rutilans, &c. On the roof was trained a plant of Thunbergia Harrisii, gaily covered with purple flowers, a very useful stove climber.

In front of the house just referred to was another pit of the same length, full to overflowing with many kinds of plants for spring and summer decoration, besides other pits devoted to Cinerarias, Primulas, herbaceous Calceolarias, and thousands of bedding plants, all arranged so as to effect the utmost economy as regards space.

At the back of the vineries is a Mushroom-house heated from the same medium as the vineries, in which Mushrooms are grown by the bushel. Mr. Rawbone told me that he found Cutbush's Milltrack Mushroom spawn to run the quickest and yield the heaviest crops.

We have now traversed most of the houses, and returning towards the terrace front of the mansion, I will take the reader along several of the walks of the pleasure grounds; and though my visit took place in midwinter, when deciduous trees were stripped of their foliage, and vegetation generally presented but a cheerless aspect, yet in my rambles I made many notes of general interest. The terrace front faces the south-east, and commands many interesting views. The mansion is a little elevated, and the park slopes gently to the railway, which is skirted by a belt of Scotch Firs and other trees of the Pine tribe. Through the vale run the rivers Churnet and Dove, and a little farther on the former terminates its course and joins the Dove; on their banks graze many sheep and cattle, which give interest to the landscape. On the opposite side of the valley is a long range of hills, called Heaton Woods, their summits almost enveloped in the clouds, and covered with



FLOWER GARDEN AT WOODSEAT.

wood and heath. To the right lies Needwood Forest, a vast tract of land, which up to the commencement of the present century was in a state of nature and a favourite hunting ground. The terrace is encircled with a low balustrading; and below the terrace, directly opposite the mansion, is a neat flower garden, of which the accompanying is a plan, laid out with much taste.

REFERENCES TO PLAN.

1. Grass, surrounded by a kerb of stone, a vase in the centre.
2. Beds edged with Box on gravel walk.
3. Beds edged with Box.
4. Beds with a broad stone kerbing. The other beds at each end are cut out in the turf.
5. Gravel walk.
6. Grass slopes.
7. Ornamental stone steps.
8. Balustrading. The squares indicate positions for vases to be filled with Pelargoniums, &c., in summer.
9. Gravel walk on terrace.
10. Grass.
11. Sun dial.
12. Mansion.

In the front of the conservatory is the croquet ground, and near this spot is a fine old Cedar of Lebanon, which has withstood the storms of many a winter, and now stands venerable in its old age. Wending our way to the left we come to a rustic summer-house, from the doorway of which may be obtained pleasant views of the lake and its numerous waterfowl. I saw it when the sun was shining through the hazy clouds, and its waters glittered like burnished silver, whilst other beauties distant and near offered themselves in turn to my eye, and united to form a scene of unrivalled interest.

Pursuing my course downwards I came into a romantic rocky dell, called the rockery and hardy fernery. Its position is sufficiently secluded, and it affords that amount of shade and dampness which the plants grown there require. It is formed of a quantity of picturesque old roots, gnarled and contorted stumps of trees, and oddly shaped stones skilfully disposed to produce effect; and from the artificial rocks little streams of water occasionally trickle. All the plants in this little dell seemed quite at home, and those of trailing habit scrambled about in the wildest confusion and luxuriance. Among the numerous plants growing in this locality I noticed as the most prominent Escallonia rubra, Kerria japonica, Euonymus variegatus, Berberis Fortuni, Yucca gloriosa, and Skimmia japonica, a very useful plant in winter either for in or out-door decoration. The beautiful berries, with which it is densely covered, render it valuable also for the embellishment of the dinner table. It is easily propagated by the seeds the berries contain. There were in addition Polystichum lobatum, Polypodium vulgare, P. dryopteris, Lastrea Filix-mas, Scolopendrium vulgare, Thujopsis borealis, on inverted old tree roots, Berberis Darwinii, and Sciadopitys verticillata, or the Umbrella Pine, intermingled with variegated Ivy, Cotoneasters, Pernettyas, tufts of Sedums, and the Green Spleenwort (Asplenium viride), brought from Croxton Abbey. I passed from this secluded spot beneath a rustic arch covered with Honeysuckles, Clematises, &c.

The pleasure-grounds present quite an undulating surface, and are ornamented with clumps of choice evergreens, and specimens of Conifers disposed in the highest style of the landscape gardener's art, and possess a charm of no mean order when the destructive ice-king has thrown prostrate the beauties of the floral world. Among the most noticeable plants were vigorous specimens of Thuja Lobbi, Picea Nordmanniana, Picea nobilis, Cupressus Lawsoniana, Wellingtonia gigantea, and different species of Juniperus, Taxus, Pinus, &c. Andromedas, Kalmias, Rhododendron ferrugineum, Berberis of sorts, Cotoneasters, and the stronger-growing Rhododendrons, are massed in quantities sufficient to produce effect, and to develope the habits and characters of the different plants. A narrow stream of water runs through the lower part of the grounds, and on its banks and in the water were growing many aquatic plants.

Arriving at a bridge, which I passed over in going towards the kitchen garden, I caught a glimpse of a long strip of ground that skirts the pleasure-ground, and which, during the summer, is planted in the ribbon style. Mr. Rawbone told me that last season he planted it as follows, and the effect was very good. Beginning at the front, the first row was Cerastium tomentosum; second, Lobelia speciosa; third, Pelargonium Brilliant; fourth, Calceolaria Aurea floribunda; fifth, Pelargonium Christiue; sixth, Stella Nosegay Pelargonium; seventh, Gladiolus.

The enclosed kitchen garden is about an acre in extent. On the walls were well-trained Peaches, Apricots, Pears, Plums, and Cherries, and round the different quarters were good examples of pyramidal Apple and Pear trees. This system of fruit cultivation is now becoming very popular, and deservedly so too, for it has been demonstrated that a great variety of fruit, and of excellent quality, can be thus obtained from a limited plot of ground. Fine beds of Strawberries with their crowns prominent were conspicuous. Many of the newer kinds were grown in the nursery plantations to test their suitability to the soil and climate previous to planting them in the permanent beds.

I have dwelt longer on the gardens of Woodseat than I contemplated; but I may say, in conclusion, that the last place I visited, but not the least interesting, was the gardener's cottage. It was, for size, convenience, and accommodation, what all intelligent and respectable gardeners ought to enjoy, and offered a marked contrast to the inconvenient back sheds, unhealthy rooms over stables, and low, damp dwellings, into which gardeners are too often thrust. The walls were mantled with Roses and other climbing plants, and in front of the cottage was a neat flower garden. I received an unlooked-for amount of courtesy from Mr. Rawbone, and I have only to add, out of no mere compliment, that the place was in excellent keeping, and that progress was everywhere apparent.—Quintin Read.

NOTES AND GLEANINGS.

Dr. Seemann, who has recently returned from Central America, has, we are informed, brought with him a large collection of novelties from the Chontales gold region, some of which are said to be of a very ornamental character.

—— To form alum crystallisations over fresh flowers, make baskets of pliable copper wire, directs the American "Journal of Pharmacy," and wrap them with gauze. Into these tie to the bottom Violets, Ferns, Pelargonium leaves, Chrysanthemums—in fact, any flowers except full-blown Roses—and sink them in a solution of alum of 1 lb. to the gallon of water, after the solution has cooled, as the colours will then be preserved in their original beauty, and the crystallised alum will hold faster than when from a hot solution. When you have a light covering of distinct crystals that cover completely the articles, remove carefully, and allow them to drain for twelve hours. These baskets make a beautiful parlour ornament, and for a long time preserve the freshness of the flowers.

—— A gardener of Ghent has, after many trials, succeeded, writes *Galignani*, in giving any kind of fruit the flavour he pleases while it is still on the tree. Let us take an Apple for instance; he pricks it rather deeply in four or five places with a large needle, and then lets it dip for a while in a bowl containing a liquid possessing the flavour he wishes to communicate. After a few seconds this liquid will have penetrated into the pulp; and this operation being repeated two or three times, at intervals of eight or ten days, the Apple is left to ripen on the tree, and will subsequently be found to have acquired the taste either of Strawberry, Raspberry, Cloves, &c., according to the liquid employed.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Broccoli, plant out, also *Cauliflowers*, and water the late Cauliflowers most abundantly. Sow, also, on a rich border, so that they may be thinned out to attain perfection without transplanting. Sow *Cabbages* for planting out for Coleworts. *Carrots*, sow another bed of Horn. *Endive*, those who desire a good and constant supply for the autumn and winter, must make a full sowing forthwith. Endive is generally sown too thickly. Another good sowing should be made in the first week of July, and a third towards the middle of the same month, after which the plants will not attain their full size. As soon as the plants are a few inches high, mow the tops of the leaves off with a scythe, cutting about one-third of the leaves away. This will stiffen the plants and cause much heart to develope itself, as well as enable them to bear transplanting better. *Celery*, plant; and completely remove all suckers. *Leeks*, prepare the ground by heavy dressings of manure. *Mushrooms*, the spawn should now be made without delay. *Peas*, the last sowing of Knight's Marrows should be made. Some of the earlier kinds should also be sown. *Lettuce*, sow thinly in rows 1 foot apart, and transplant from seed-beds before the plants become too large. *Savoys* and *Brussels Sprouts*, plant.

Turnips, this is a good time for a liberal sowing of autumn Turnips, the Dutch or Stone is best for the kitchen garden.

FRUIT GARDEN.

The ground having acquired its usual summer warmth, with abundance of moisture, wall trees are making rapid growth, and prompt attention must accordingly be paid to their regulation. The foreright shoots of Pear trees will require to have their points cut or clipped off, but do not cut their points back to the extent usually practised. Two or three inches off their points will generally be sufficient, and if the shoots appear crowded in places they may be thinned by cutting some out close to the base, and others to about 3 inches from it. If any shoots are overtopping the wall they should be reduced in the first instance. The fruit of Peach and Nectarine trees should be finally thinned. Laterals must be stopped above the second bud. Advantage should be taken of moist weather to remove the clay from grafts where the growth of the scion requires the matting to be loosened, but this must at all events be attended to before there is danger of the scion being galled by the ligature, which will be the case in proportion to the quantity of the foliage that the shoot has made. Layer Strawberry-runners in small pots for forcing.

FLOWER GARDEN.

All recently-planted beds should be regularly watered, observing to stir the surface as soon as it again becomes a little dry, to keep the earth moist beneath and to prevent the ground from cracking. Rockets, Phloxes, and other herbaceous plants now coming into bloom should also be watered if the weather continues hot and dry. Dahlias would be greatly improved by a slight mulching of rotten dung during very hot or dry weather. Do not mow grass lawns too frequently if the weather continues hot, but ply the Daisy-rake during the heat of the day. Gentian edgings should be regularly attended to with water, nothing injures this beautiful plant so much as drought. Seedling Auriculas which have been pricked out in store pans must be protected from drenching rains, at the same time taking care that they do not suffer from extreme drought. Occasionally look over old plants, keep them free from weeds, and carefully notice whether the drainage is free. No plant suffers so soon as the Auricula from deficiencies in this respect. Shade Ranunculuses from intense heat where it is desired to prolong the bloom, or where the flowers are to be exhibited. Flowers intended for cross-breeding ought not to be shaded. Pinks are in various localities unusually late this season, but are now making rapid progress. Tie-up the buds with waxed thread, retaining only one or two on weak plants. Pipings may now be put in. The most successful mode of propagation is to prepare a border on the north side of a wall or fence, to dig it one spit deep, to rake the surface fine, and to cover it about 4 inches deep with about a barrowful of light sandy soil; then water with a fine-rosed watering-pot. Instead of cutting off the piping at the third or fourth joint, it is pulled out of its socket, and, being held between the finger and thumb, it is pushed into the soil. Not a blade of grass should be cut, and no knife ought to be used in the operation. In a month or five weeks the pipings will be struck and fit to plant out in beds in showery weather. Pipings of Carnations and Picotees will strike freely if treated in a similar manner.

GREENHOUSE AND CONSERVATORY.

The conservatory being thoroughly relieved of all superfluous stock, nothing remains but to carry out a cleanly system of cultivation, and to introduce fine specimens from other houses or pits. All available surfaces should be moistened with water morning and evening, thorough ventilation afforded, and a thin canvas screen kept on during bright sunshine. In the mixed greenhouse use abundance of water morning and evening, with a free circulation of air. Camellia stocks may now be grafted, choosing the young wood which has the leaves perfectly developed, and which is of a ripening brown colour at the base. We use the bottle plan, and find it answer well if the plants receive close or cutting treatment for a month afterwards. A slight hotbed with a bottom heat from fresh fermenting matter (to yield much steam), of 80°, will do well, placing a foot deep of cinder ashes over the bed to keep down the worms. Remove all young Heaths into frames or pits; if to frames, make them face the north, when little shading will be required. Place the plants on a bottom of coal ashes, and supply them liberally with water. As many of the specimens which flower freely are apt to go off without giving warning, pay particular attention in watering, that the ball is quite moistened through. This tribe of plants suffers more just now from want of an abundant supply of moisture than from all other causes combined. Many of the plants also, from long confinement under glass, when succeeded by hot and dry weather, suffer extensively from mildew. When this is perceived sulphur them well, and place them in the open air under a wall, or better, behind a hedge in a north aspect. In a few days the sulphur may be syringed off, first laying the pot on its side, and then plying the syringe in all directions.

STOVE.

This will now be a good time to increase many of the valuable sorts of stove plants, they being now in a free-growing state. Take off short and rather firm shoots, plant them in sand in bottom heat under a hand-glass, and most of them will strike root in a few days. The Luculia, of which so much has been written, will root with certainty and freedom. The main point is to catch the wood in a proper state; select short young shoots, and the difficulty of propagating it ends. A very free use of the syringe, with abundance of air night and day, should be persisted in, the main business being to produce sturdy plants with short-jointed wood. Liquid manure, composed of cow-house drainage, guano, and soot water, should be constantly in use, taking care to apply it in no other way than clear and weak. Give air most liberally to Orchids, syringing them freely early in the morning, and shutting up much solar heat, together with wet floors, walls, &c.

PITS AND FRAMES.

All late-struck cuttings, if not wanted for turning out, should be potted off for store plants, or for filling beds in the autumn. Continue to shift any plants that require it. A little air should be given during the night, if the weather continues hot, to prevent plants from becoming drawn. Shade during the heat of the day, and water freely.—W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Though still very busy in all departments we are beginning to have the prospect of mastering the work. No weather has been more suitable, from its sunshine and showers, for encouraging weeds, as well as more useful growths, and the hoe has been unsparingly used at every favourable opportunity among growing crops.

Walks which a month ago were, as respects cleanliness, everything that could be desired, have again demanded attention. A broad smooth walk was becoming green at the sides, robbing the fresh growth of the Box-edging of its beauty, and after a shower the sides were hoed, raked, to be followed by a rolling, when the small weeds have been withered out of sight, for picking them up would have been a serious affair. The centre or main point of the walk being clean was left untouched. Had the verges been tiles or slates we might have ventured on a little salt, but we never like to put salt nearer to Box-edgings than 12 or 15 inches. The central part of the walk was too fine and smooth to permit of salting to advantage, even if it had needed it, as the salting would always have a tendency to make the surface smoother, and then in wet damp weather it would increase the tendency to rise and clag with the boots. Another side walk was becoming rather green, conspicuously so when the small weeds were glistening with the dew, but as this had a rough pebbly surface we merely hoed and raked the sides, and salted the centre, as that will make short work of the weeds there, and if the salt does crack and lessen the size of the pebbles in the gravel, it will make it all the more pleasant and agreeable to walk upon.

We are particular on this matter, because several inquiries have been made as to the circumstances under which it is advisable to salt walks, and we have half a dozen complaints that firm smooth walks have been rendered unfit for walking upon after salting whenever the weather was damp. "Ango" tells us he has a broad smooth walk becoming completely green, and he dreads breaking it up, and wants to know how to clean it, unless by a layer of salt. We would advise scraping off the surface if that can be done, and adding a sprinkling of sandy fine gravel. The quickest way would be to salt it all over, and on the salt place a good sprinkling of fine sandy gravel. The fresh gravel will become partly saturated with the salt, and the surface will yet be so free from it that there will be no sticking to the feet in damp weather. To heavily salt a smooth walk without such a surfacing is almost to make sure of a soft walk all the winter. Salt, therefore, we consider the cheapest and quickest way of freeing walks from weeds; but our experience

forces us to add that it is anything but economical when the wear of gravel and the subsequent comfort of walking on it in all weathers are concerned. This is more especially the case when chalk forms any part of the gravel.

When court-yards are pitched with large hard stones, or still more neatly with hard pebbles, from half to the full size of a fist, and on which the wasting agency of salt acts little or nothing, there is no means of cleaning such places equal to salt, either scattered over it on a sunny day and the dews allowed to melt it, or the salt mixed with hot water close on the boiling point and applied at once. We think scattering the dry salt thickly enough just to make a white sprinkling is as effectual as any, if the salt will remain a day or two without being all dissolved. If a sudden shower follows after the application, it will be less effectual. The scattering of the salt is, therefore, most effectual when applied in dry weather, and the whitish appearance is little thought about as unpleasant. The salt when dissolved in hot water acts at once. It is best, however, kept from edgings of all sorts, as it will injure Box, as well as weeds, and even stone and tile edgings, if at all soft, will crumble and waste from its use. Mr. Fleming used it at Trentham, in small parterres, and even among the letters of the names of some of the family formed with Box, but we cannot say that we have used it much close to Box edgings, without seeing its deleterious effects.

Potatoes.—A gardener in a large place has informed us that a part of a pit of his Potatoes went off just as we described last week, the underground stem becoming rotten a little below the surface of the ground, whilst earlier and later varieties under similar circumstances were not affected. In his case, as if to show there was nothing in the soil, he pulled out all such Potatoes, and planted again, and the second crop was growing quite healthily. This is the only other case of which as yet we have heard, and it seems to throw no light on the cause or reason of the failure. In our case, we never had a crop that looked better before the disease manifested itself.

Seeds.—All sowings must be secured from birds, and covering the seeds with red lead just damp enough to encrust them, is a good protection. A net is also useful, as there are many plants of which birds are fond just as they are in, and a little beyond the seed-leaf. As to Peas and Beans, we found the red lead also effectual, and even mice scarcely touched them, but for pheasants and partridges we find the cheap galvanised wire netting advertised every week, of two-inch mesh, quite a sufficient protection. We merely bend the wire in semicircular form over the row, and put in a few sticks along the sides to fasten it to the ground, and remove and roll it up when the Peas are 3 inches in height. The pheasants can put their heads easily through the meshes, and withdraw them without injuring themselves, and without being able to reach the Peas.

Cauliflowers that were coming on rather fast were pulled up and placed in a wide barrel with a little water at the bottom.

Peas.—All have been cleared from the orchard-house, as the outside ones have been coming in freely. Cauliflowers and Cabbages will now be benefited by all the manure water that we can give them. Cottagers in general are not yet aware how largely they may increase their crops by a free use of all the slops and sewage from their houses, &c. A man of thought will contrive some receptacle in his garden, at the farthest possible distance from his house, where he can always put his hand on a number of pailfuls of such valuable manure. The precaution we must add is—use it as often as you like, but not over-strong.

Cabbages.—Merely for the sake of the amateur, who may have little room and wishes to make the most of it, we would speak in high favour of Messrs. Veitch & Sons' improvement on Atkins's Matchless Cabbage. We have just now a little piece fit for table; compact heads, firm, and becoming white inside, and on actually measuring the plants we find they range from 11 to 12 inches in height from the surface of the ground, the plants having had no earthing-up, whilst the diameter of the plants, from outside to outside of the large bottom leaves, was not more than 12 inches. This kind, therefore, could be grown in the greatest perfection in rows 15 or 16 inches apart, and 1 foot apart in the row. We measured fine specimens of larger Cabbages beside them, with larger heads it is true; but the diameter of the plants, as regarded the lower leaves, was from 27 to 30 inches. The cabbaging central part is the great object; the huge outside leaves make little appearance on the table, and hence we speak favourably of this compact Cabbage, which is quite in the style of Atkins's Matchless, which we grew for many years; but it is still more compact and upright in growth, and has, so far as we see this year, fewer and smaller side leaves.

Sowing, planting, &c., much the same as in last and previous weeks. Pricking-out winter stuff, as every yard of ground is already occupied, and will transplant when there is more room. We lost every Kidney Bean out of doors by the frost, and not one of them came or broke again, as they have done in many places. Garden Beans were scarcely injured—not so much as Peas, and those transplanted are coming in well.

FRUIT DEPARTMENT.

Gathered the first dish of Black Prince Strawberry out of doors on the 14th of the month, and picked a few Keens' Seedling. Keens' Seedling in the orchard-house has done very well, and is yielding profusely. British Queens in full bloom in the coldest orchard-house during the severe May frosts have not set so well. We feared at the time the bloom was injured. For a standard that will bear all sorts of rough treatment, there is no Strawberry with which we are acquainted that will compete with Keens' even now, though many of the newer kinds are very good, and bear well too; but it is rare for Keens' to fail under even adverse circumstances. Thinned pretty well finally the crops in the first orchard-house, though we fear we have still left too many, and we must commence with the later house immediately, as the fruit is still far too thick. Cherries have ripened well, and come in useful, and it will be as well to have them over before they come in out of doors. We saw on Saturday a few shoots of Peaches which had been attacked by our old enemy the Aphis persicæ, and we quietly slipped them off and took them carefully to the nearest furnace, and gave the house, except the Cherries, a good lashing with clear soot water. Out of doors the changes of the weather have brought fly, green and black, on Plums and Cherries, and after a rough handling to remove the worst, gave the trees a hard syringing and engining with clear lime water and clear soot water, which seems to have settled the most of them. Will go over them with a brush and clear quassia water as soon as we can.

ORNAMENTAL DEPARTMENT.

Proceeded with our bedding-out, though there will yet be much to do with carpeting and edging-finishing. Dahlias will now be perfectly safe, and it was as well to wait a little in such weather. Tulips and other bulbs may be lifted as the foliage decays. Pinks and Carnations and Picotees want supporting carefully. There is no support neater and more economical than twisted wire, about the thickness of a quill, 6 inches or so straight to go in the ground, the part above twisted in half volutes, so as to leave an open space when looked down through the centre. Fifteen inches would do for most Pinks, and from 30 inches for Anne Boleyn Pinks, Carnations, and Picotees. No tying is required. You merely place the flowering-stems as they grow round the twist, and that holds them securely. A set of such wires, if kept painted, would last for many years. The quickest way to paint them is to place the paint on a glove on the left hand, and then draw the wire regularly through it and quickly. If the wires galvanised they need no painting. The Messrs. England, wire-workers, of Hertford, used to make them in large quantities. No one after using them would ever be troubled with cutting sticks and tying the shoots to them. There is a broader whorl at the top for the flower to rest on. We used them largely at one time; but, alas! the rabbits did for that pleasant work, and if we obtain a good collection again of these fine, old-fashioned flowers, we must keep them inside of walls.

In moving plants from the houses, conservatory, &c., for the summer season, great care must be taken that they receive no sudden check, and especial care must be exercised that the pots are not exposed to a burning sun. See the directions given by Mr. Keane, as to Heaths, Epacrises, Primulas, &c.

We will finish this busy week with a few words on *sowing small seeds*, such as those of Calceolarias, Primulas, and Cinerarias, at this season, to meet the case of a few correspondents who tell us that year after year they sow, and are no further forward, as they hardly ever obtain a plant, though purchasing the seed from the best seedsmen. We have seen pots sown with no better success, and from the same packet we have sown and had a carpet of seedlings. We believe in the great majority of cases, the want of success is owing to some fault in the watering; either the seeds when germinating are starved with dryness, or they are deluged, or washed out of the pots, and perish then from exposure to sun, &c. We would recommend for all small seeds, not so much for Primulas as for Calceolarias, Lobelias, &c., little or no watering until the seedlings appear, and then let moisture be given as much as possible

from beneath, instead of from above. To be precise, choose pans or pots for sowing in—say the latter, for convenience, and suppose they are six-inch pots, fill them nearly half full with drainage, then a layer of rough riddlings, then another layer of finer soil—say sandy loam, and a little peat, pressed well down, and a third layer of finer still; but to terminate within one inch of the top of the rim of the pot. Press all firmly down with a round board, with a nail or a wooden peg in the centre for a handle. Then water all these thoroughly, either through a fine rose, or by setting the pots in a tub of clean water, so that the water will cover them all over. When soaked lift the pots out carefully, and allow them to stand in a shady place for from twelve to twenty-four hours, until they are thoroughly drained, and the surface soil is just becoming somewhat dry. On this sow the seeds. Scatter on them, if very small, the least sprinkling of dry sand, and press with the board, or the bottom of a pot gently. Plunge the pots, but not too closely together, in ashes in a frame, or under a hand-light. Place a square of glass, or a piece of stout paper over each pot, if glass, which is best, cover it with paper, or a little moss, until the seedlings appear. If notwithstanding this care the surface soil become rather dry before the seedlings appear, pour water among the ashes in which the pots are plunged, and that will generally be sufficient. If in some extreme cases that does not afford moisture enough for some particular small seeds, either sail the surface of the soil carefully with water, or what is better and safer, lift the pot carefully out, and holding it in your hands place it in a pail of water, so that the surface shall have water placed gently all over it without the chance of displacing a seed.

With such care as above detailed—all very pleasant work for amateurs—the little seedlings will soon coma in general, and as soon as they manifest themselves the shading of paper, &c., must be removed by degrees—first at night, then morning and afternoon, and then altogether; and air should be given also gradually—first raising the square of glass at a corner, increasing it by degrees, taking it away at night, replacing with this raising up during the day, and finally removing it altogether, leaving only the top of the hand-light on the frame, and giving more air by degrees by this outer covering. This may be all done in a common window-sill. A thin paper frame makes an excellent substitute for a hand-light, and a double pot with moss between the inside and outside pot makes a fine substitute for a bed of ashes. Bear in mind that until the seedlings of these small seeds are pricked off separately, or in little patches at first, it will be more or less unsafe to water a thicket of seedlings overhead with the finest rose. It will be safer every way to cover the surface with water by pouring it carefully on a potsherd at the sides, or setting the pot, held by the hand, in a pail of water until the water gently trickles over the rim and covers the surface. If the outsides of the pots be kept moist, these operations will seldom be necessary, and this object can be effected as well by a double pot as by plunging in a bed. With such precautions there will be fewer complaints of want of success, and less blame laid at the doors of the best and the most honourable seedsmen.—R. F.

COVENT GARDEN MARKET.—June 19.

Heavy supplies from some parts of the Continent have had considerable influence here, and prices recede The quality of our own produce is well kept up, and contrasts favourably with that of the former, which suffers considerably from packing and the different shifts in transit. The arrivals ceastwise of Potatoes have been large, the chief shipping ports being Lisbon, St. Malo, and those of the Channel Islands, best samples maintaining their previous rates—viz., 3d. to 4d. per lb.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes	each	0	3 to	0	6	Leeks	bunch	0	3 to	0	4
Asparagus	bundle	1	6	6	0	Lettuce	per score	1	0	2	0
Beans, Kidney,	per 100	1	0	2	0	Mushrooms	pottle	1	6	2	6
Scarlet Run.	½ sieve	0	0	0	0	Mustd.& Cress,	punnet	0	2	0	0
Beet, Red	doz.	2	0	3	0	Onions	per bushel	4	0	5	0
Broccoli	bundle	2	0	3	0	Parsley	per sieve	3	0	4	0
Brus. Sprouts	½ sieve	0	0	0	0	Parsnips	doz.	0	9	1	0
Cabbage	doz.	1	0	1	6	Peas	per quart	0	9	1	6
Capsicums	100	2	0	3	0	Potatoes	bushel	4	0	6	0
Carrots	bunch	0	6	0	8	Kidney	do.	5	0	6	0
Cauliflower	doz.	3	0	6	0	New	lb.	0	3	0	0
Celery	bundle	1	0	2	0	Radishes	doz. bunches	0	9	1	0
Cucumbers	each	0	6	1	4	Rhubarb	bundle	0	4	0	0
pickling	doz.	0	0	0	0	Savoys	doz.	0	0	0	0
Endive	doz.	2	0	0	0	Sea-kale	basket	0	0	0	0
Fennel	bunch	0	3	0	0	Shallots	lb.	0	8	0	0
Garlic	lb.	0	8	1	0	Spinach	bushel	2	0	3	0
Herbs	bunch	0	3	0	0	Tomatoes	per doz.	3	0	4	0
Horseradish	bundle	2	6	4	0	Turnips	bunch	0	6	0	9

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples	½ sieve	3	0 to	4	0	Melons	each	5	0 to	8	0
Apricots	doz	3	0	4	0	Nectarines	doz.	10	0	18	0
Cherries	box	2	0	3	0	Oranges	100	8	0	14	0
Chestnuts	bush.	0	0	0	0	Peaches	doz.	15	0	36	0
Currants	½ sieve	0	0	0	0	Pears (dessert)	doz.	0	0	0	0
Black	do.	0	0	0	0	kitchen	doz.	0	0	0	0
Figs	doz.	6	0	10	0	Pine Apples	lb.	5	0	8	0
Filberts	lb.	0	0	0	0	Plums	½ sieve	0	0	0	0
Cobs	lb.	0	9	1	6	Quinces	doz.	0	0	0	0
Gooseberries	quart	0	4	0	6	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	4	0	8	0	Strawberries	lb.	0	6	3	0
Lemons	100	8	0	12	0	Walnuts	bush.	10	0	20	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Orchard-house Management.—A clergyman, "W. W.," wishes that "C. P.," who wrote on this subject at page 393, would send his address to this office, as "W. W." would be glad to have permission to visit "C. P.'s" orchard-house.

Suggestion (*W. Taylor*).—Thanks for your suggestion, but we carried out your idea very fully some years since—and all the subjects you name, Soil, Manures, Light, Heat, &c., were included. The whole have now been collected and published in a volume, entitled "Science and Practice of Gardening," which you can have free by post from our office, if you enclose forty postage stamps with your address.

Depriving Standard Roses of Flowers (*J. P.*) —If the standard Roses are deprived of their flowers now, they will flower again in August. The objection to depriving Roses of their first flowers is, that it delays the ripening of the wood for next year. I advise "J. P." to leave on the centre bud on such wood as he wants for next year, and deprive the branch of the other buds. As soon as the flower drops the branch may be cut back to a good full eye. Roses require different periods to come to maturity of flower. Général Jacqueminot is one of the quickest. Duchesse d'Orleans and Washington are two of the slowest. "J. P." may cut back some of the inferior branches at once. If Roses are deprived of their flowers early in the season, of course, their autumn blooms will be finer. I am not satisfied with less than three series, and continuity of blooming besides. The Roses here (on the Manetti stock), began to bloom abundantly June 8th, and I expect them to continue doing so till winter stops them.—W. F. Radclyffe.

Flower Garden Plans (*A Young Gardener*).—As soon as the work, which is in progress, shall be sufficiently advanced, all necessary particulars will be duly advertised. For obvious reasons it would be premature to make any definite announcement at present; but we may add that it will be published with as little delay as possible.

Arabis lucida variegata and Aucuba-leaved Daisy for Edgings (*Bellis*).—We consider Arabis lucida variegata the most beautiful of all golden-variegated edging plants of compact dwarf growth, and to be preferred to the Golden-leaved Daisy, which is also very handsome. Neither of them can be raised from seed, both are increased by division. The fragment of Fern sent us was Polypodium dryopteris.

Pyrethrum Golden Feather (*Idem*).—The price of this handsome, dwarf, compact-growing plant is from 2*s.* 6*d.* to 3*s.* 6*d.* per plant. It may be obtained from the principal nurserymen.

Fungus on Lawn (*A. S.*).—You may free your lawn of the fungus by applying a dressing to the lawn with salt at the rate of 1 lb. per square yard, or lime water made by pouring thirty gallons of water over a peck of fresh lime, stirring well up, and allowing the liquid to stand for forty-eight hours. Water with the clear liquid, giving a good soaking.

Ventilating an Orchard-house (*A. B.*).—We would decidedly approve of the perforated zinc over the ventilating openings to keep out flies, &c.; but these openings will have to be all the wider in proportion to the spaces of zinc, through which no air can go.

Destroying Ants and Woodlice (*Joseph Stillwell*).—You may drive away the ants by sprinkling guano over their haunts, and you will find a Bantam hen and chickens make quick work of the woodlice. A breed of Partridges turned into your garden would do better with the ants.

Peach-tree Leaves Diseased (*A Subscriber*).—The leaf when it reached us was merely a leathery brown mass. There were some marks as if insects had been present. We incline to think that it is a bad case of blotch and curl, chiefly owing to the unfavourable weather, and, perhaps, also a little, and only a little, attributable to the sulphur and tobacco-water dressings. Cut off all such leaves by degrees, the worst first, and ere long the tree will recover itself and ripen its wood. The more green the wood last autumn, the more likely would the trees be to suffer from this infliction. When leaves are sent in a letter, it is often difficult to detect anything about them.

Select Gooseberries (*E. F. F.*).—Snowball (Adams), white; London, red.

Various (*W. M. G.*).—You may smoke a vinery a week after the Grapes are set. Zinc pots may be used with advantage for growing all kinds of plants. They do well, as proved practically, for Strawberries and all kinds of cuttings. We would prefer Fuchsia fulgens, corymbiflora, and the large-berried kinds, as those to experiment upon for raising berries fit for table. We never knew anybody who liked to do more than taste them.

Constructing a Small Greenhouse (*T. S.*).—We should like to understand you better before advising you, as, if the wall at the bottom of the garden, or that portion which you can use, faces due north, and the garden is only 18 feet wide, then we can hold out no hope of your being able to grow Grapes, or even good greenhouse plants, though such a house would do to keep the more hardy ones in during the winter, and the more hardy bedding plants, and, with the help of your proposed flue, would do admirably for Ferns and Mosses. Such a house might be the height of the wall at back, and for a lean-to, 10 or 12 feet wide and 6 feet in height in front. We would pave the floor, and make the top of the fine a part of the paved floor, and that in the passage near the front. Provided you are not shaded on the east and west, and could come out 20 to 30 feet, you might have a span house from 10 to 13 feet wide, with a path down the centre, and that would suit any purpose. If your proposed building is to be on the south side of the wall, then with a lean-to you can grow anything.

Heating a Greenhouse (*Ignoramus*).—We would prefer plan No. 1 for the specified purpose, because the three-inch pipes will heat sooner on such an emergency as a sudden frost than four-inch pipes. We would, to give you more power, and to diffuse the heat more regularly, alter the flow-pipe, and take it along the front instead of along the back. Thus, we would take the flow from *a* to *d*, then to *c*, *b*, *a*, and return from thence. Were the front of your stage on posts instead of a four-inch wall, we would place the pipes inside of that instead of outside on the pathway. As it is, we would rather make the wall pigeon-holed to let the heat out freely towards the path and the front platform, and have the pipes inside of it, for it may be necessary at times to sulphur the pipes, and if in the pathway a lady's dress is apt to come in contact with them, otherwise they will do where proposed.

Wireworm in Vine Border (*D. M'Nab*).—The best mode with which we are acquainted of clearing ground of wireworm, is to point-in a good dressing of soot, plant a thin crop of Potatoes, and strew the ground with soot so as to make it quite black. Placing Potatoes or Carrots in the soil and examining them frequently is a good plan.

Vine Shoots Mildewed, and Bunches Turning Brown (*J. M. M.*).—The appearances on the Vine, the mildew on the stem of No. 4, and the turning brown and dropping of the lower end of the bunches as they are coming into bloom, are partly owing to the vigour of the Vines and to a close atmosphere—hot at one time, we presume, and cold at another. The blotches on the leaves show the presence of accumulated vapour in a close atmosphere, that vapour becoming hot by the sun before air is given. The remedies in your case are lessening the vigour of mere growth by a drier and warmer atmosphere, and air at all times, even affording a very little at night, unless when it happens to be very cold. We do not discover any mildew on the leaves, but we would wash the stems affected with a paint of soft soap and sulphur. We would cover the heating apparatus with sulphur paint, but taking care that the heating medium is never higher than 160°. We would also paint all open places on the wall with sulphur. These precautions, with more air and a drier atmosphere, we hope will cause all to come right. We had 6*d.* carriage to pay for the box, which please remit in postage stamps.

Names of Plants (*W. Hathaway*).—If you send us specimens with a number attached to each, we will endeavour to identify them. (*Constant Subscriber*).—Pelargonium cucullatum and Mahernia incisa. (*M. B.*).—1 and 2, Cystopteris fragilis; 3, Pteris scaberula. (*T. S.*).—1, Olearia nitida; 2, Celsia betonicæfolia; 3, Thalictrum aquilegifolium. (*E. S.*).—Scleranthus annuus. (*G. B.*).—Thermopsis fabacea. (*C. F.*).—Oncidium altissimum.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 18th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 12	30 061	29.922	85	50	60	58	S W.	.06	Very hot; very fine; cloudy at night.
Thurs. 13	30 057	29.901	66	46	60	56	S.W.	.00	Partially overcast; densely clouded; cloudy.
Fri. .. 14	29.848	29.790	68	42	59	57	N.W.	.00	Fine; overcast; very fine at night.
Sat. .. 15	30.024	29.936	62	46	59	57	N.E.	.12	Fine with white clouds; cold and overcast; cloudy.
Sun... 16	30.090	30.051	62	42	59	56	N.	.00	Overcast; cloudy; very fine at night.
Mon... 17	30.115	30.092	64	41	59	56	N.W.	.00	Cloudy; overcast; fine but cold at night.
Tues.. 18	30.032	29.978	75	59	58	56	S.E.	.00	Fine; overcast; overcast and warm.
Mean	30.032	29.953	68.85	46.57	59.14	56.57	..	0.18	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THIS YEAR'S BIRMINGHAM SHOW.

Before the schedule of the Birmingham Show for this year is issued, I am desirous of making one or two suggestions. To do so may be deemed Quixotic, the Committee having on former occasions displayed so enormous an amount of *inertia*, or passive resistance to all outward pressure, and I should, indeed, deem it waste of good paper to attempt persuasion on any of the vital matters which have from time to time been discussed. Still it has appeared to me that whilst dogged enough in some things, they have had a real desire to make the Show more useful and popular, especially amongst buyers, and to details bearing in this direction I shall entirely confine myself.

I confess I am one of those who like the subdivision of the classes into cocks and pairs of hens; but I think, in simple justice to exhibitors, the system of entrance fees should be somewhat modified, seeing that each pen of three birds now takes double the amount of entries and accompanying fees compared with the old plan. This is not fair, and now that exhibitors are compelled to show all cocks singly, I think the rule of requiring a second subscription of one guinea after the first four pens should be in some way modified—how I would scarcely say; but I would suggest a compulsory subscription of 10*s.*, and a uniform entrance fee of 5*s.* per pen, as about the same thing, for the first four pens, and somewhat more in accordance with the present plan of the schedule.

It is also highly desirable that the cocks and hens in each class should be arranged over each other, instead of in one long horizontal line. Last year's arrangement caused much time to be spent in ascertaining the relative merits of a strain in consequence of this. All breeders know that some strains excel in pullets and others in cockerels, and that it is, therefore, highly desirable before buying a cock from any yard to see what kind of hens the same yard produces. I took particular note of the relative numbers and arrangements of the sexes last year, and can say positively, that whilst by arranging the classes as I suggest, both the judging and comparison by purchasers would be much facilitated, no real difficulty would occur.

Thirdly, It is absolutely necessary for the credit of the Show, that during the Saturday previous to its opening all alike should be rigorously excluded. I am aware this is professedly done, but every one knows how constantly and shamelessly the rule is violated, to the benefit of the mere trading dealers and those large breeders who can send their poultry-men, the injury and disgust of the general body of purchasers, and the yearly disgrace of the Committee. I know one Bristol exhibitor who last year penned his own birds, and, doubtless, many others did the same. This of itself is most unfair to others; but the principal evil of this laxity is in connection with the sale department, and leads naturally to the last suggestion I shall make.

That is, that the sale-office should not be opened until twelve o'clock, thereby to place all upon an equal footing, by giving to all a short interval in which to make their selections. The effect of the present system is, as is well known, that for an ordinary purchaser to buy fairly a first-class pen marked at a moderate price is impossible. All the pick of the Show is either snapped up at once by those who have walked round on the previous Saturday and made their selections, and who can, therefore, at once walk into the sale-office, or by those who have confederates on whose judgment they can rely, and also "hunt in couples." The mode of operation is well known to many; but for the sake of the uninitiated, I may just say, that whilst one worthy obtains the best position he can near the office-door as the actual buyer, the other goes round to select the lots, and telegraphs the numbers to his confederate on his fingers, the result in either case being that the best lots go into the possession of dealers whose only object is to sell again at a profit before the general public have a chance.

It may be said, and was said to me by a large practical breeder to whom I was talking the other day, that to delay the opening of the sale-office till twelve o'clock would cause a "regular fight." So far as that goes, it is so very near a fight

now that I cannot see the force of the objection. It would at all events be a fair fight, which is not the case now; and if I am beaten—say by "NEWMARKET," in the scuffle for the first claim to a pen of Game, I should at least know the reason why, and may go up next year with my "big brother" and hope for better luck. I could give some curious instances of the brazen cheating carried on openly under the present system; but my time is as valuable as your space. The matter is self-evident, and I can conceive no other way to stop the evils complained of than that I have suggested.

These hints I throw out simply as practical matters of detail, only trusting that the Committee will repeat this year the addition of Mr. Teebay's name to the list of Judges—a step in the right direction, and which shews that they are not altogether unamenable to reason.—NEMO.

THE COMING SHOW AT BADMINTON.

WILL you permit me to call the attention of your readers to the Poultry Show which will be held at Badminton on August 7th? This is a first show, and therefore far less known than shows which have been held year after year. A few clergymen and others interested in poultry have got up the exhibition of these birds in connection with the Badminton Farmers' Club; and I cannot help thinking, that the name of Badminton being so well known as associated with that of the Duke of Beaufort, many will like to have an opportunity of gratifying their poultry taste, and in addition having a peep at his world-renowned residence. There will be prizes for different varieties of fowls —small, it is true; but then the Show is young and the Stewards careful, and if the Show pay this season doubtless the prizes will be of greater value next year. There are also prizes for Ducks, Geese, and Turkeys; then prizes for Pigeons—viz., for Carriers, Dragons, Powters, Fantails, Turbits, Shortfaced Tumblers, Baldheads, Barbs, Nuns, and Jacobins. I could have wished there had been also a prize for Any other variety, as this would have filled many pens. I trust there will be some arrangement, by vehicles put on for the day, for conveyance from Chippenham and Yate stations; and then I feel sure, the day being favourable, we shall have a happy throng at Badminton.—WILTSHIRE RECTOR.

BRAHMA POOTRAS.

I HAVE heard it asserted of these, that they are the native American Cochin-Chinas or Shanghaes; but as their East Indian and south-eastern Asiatic origin is well known, this is rather too positive and exclusive an assertion. The pea-combed and non-vulture-hocked, are the made Brahmas, and the single-combed and vulture-hocked the true and pure breed in my opinion.

The Malay origin of the pea-combed birds appears to me to have been carefully concealed by most of their breeders, who express surprise and dissent when taxed with the Malay origin of their pea-combed strains. I think that the strains with the pea-combs, and not vulture-hocked, are also more liable to the long Malay necks than the single-combed and vulture-hocked birds are. Of course, the pea-combs could have been produced as easily in India, by the Malay cross, as in America, or in Britain. The brown-marked birds appear to me to be of the primitive colour of Brahmas, and those with the other markings, not brown, to be the made colours and strains. Pea-combed birds, though the favourites, are certainly not the primitive pure strain of these birds, the pea-comb being popular, as making them a distinct sort from the Cochin-Chinas. Unless for this, I think the pea-comb should be considered as nglier, and also a defective Malay cross.

The vulture hocks are, I think, a proper and distinctive mark of the purity and goodness of the breed, as no bad cross could produce them, but only the Cochin or Shanghae cross. I also think the single-combed birds would be found more prolific than the pea-combed.

I think that the term Brahma Pootra would do best for the whole tribe, Cochin-Chinas and Shanghaes included; but all three names are derived from locality, the river Burrampooter or Brahmapootra, which divides India from Assam and Burmah, being the origin of the first name, and they are probably to be found on both sides of this river. The port of Shanghae, in China, it is scarcely necessary to remark, has a large trade, especially with the United States.

The single-combed Brahmas might not incorrectly be termed the Birchen Grey, Birchen Dun, or Mealy Grey Cochins. I think the Malay expression of face is only found in the pea-combed birds, and never in the others. I think, too, that vulture-hocked birds have, as a rule, a longer, heavier, and better leg-feathering. I think that they ought to be the cup birds in either Cochins or Brahmas, and as the pea-combed have been chosen for cup birds of the latter, though the "bastard" breed of Brahmas, perhaps the vulture hocks should have the cups among Cochins; but I should prefer single combs and vulture hocks in both sorts myself, as distinguishing marks, though I may be singular in so doing.

Pea-combed Brahma Pootras may be bred from any Malay cocks put to the single-combed Brahma hens, as well as from the Birchen Grey Malay cocks put to Cochin hens. Brahmas, like all other fowls, must, of course, be judged by the opinions of the best judges, but as an individual, I consider the single-combed and vulture-hocked to be the true, pure, unmixed breed, and the pea-combed to be the mixed strain, which has been produced by crossing with the Malays. The pea-combed birds are also, I think, uglier in the head than the single-combed birds and clumsier, being thicker in the head cross-ways.

The pea-combed Brahmas have only been increased or continued by careful selection, but may have been first produced accidentally in the United States by the Malay cross. All Brahmas would naturally incline to breed back to the single combs, and, perhaps, to vulture hocks too, if left to themselves in breeding, and often these characteristics are still produced when not wanted, and though birds in which they are present are not at all selected for stock. The legs, or shanks, of the pea-combed birds are often rather too long, partaking of the Malay cross.

As to habits the Brahmas appear to me almost exactly to resemble the Cochins. If crossed with the more sterile Dorkings, especially the rather sterile Grey Dorkings, such Brahmas would be less prolific than others, as Malays are more prolific than Dorkings, especially Grey Dorkings, not being so dry as Dorkings in their constitution. Dorkings could not, unless rose-combed, have given the pea-comb at all, and the pea-comb has much more resemblance to the Malay-comb than to the Dorking rose-comb. The Malay cross, likewise, would not at all improve the laying or table qualities of pea-combed Brahmas. Brahmas are said to sit a little less frequently than Cochins, to lay somewhat less, and to be a trifle worse for table, but are much the same. The greyed-colour and pea-combed Malay cross would lay rather worse, I think.

Brahmas, with Cochins and Bantams, are the best breeds for small spaces and confined yards; the Bantams from their small size and being, when red-combed and healthy, such good winter layers, though their eggs are small; and the Brahmas and Cochins from their inferior powers of locomotion. All other sorts require larger runs than these three.

The Malay cross cannot improve pea-combed Brahmas for table, as the Malays are the worst table fowls of all. Some breeders are ignorant that their pea-combed Brahmas came from Malays by crossing. Some freely confess it, and some conceal it.—TREVOR, OTHERWISE NEWMARKET.

DOTTINGS AT SALISBURY.

WITH a tremulous hand I seize, as T. Hood hath it, "the epistolary implements," for it would seem impossible to make "dottings," without treading on the toes of some, or obliging others by treading on their skirts, as our friends in the Sister Isle prefer being treated. However, having been able to spend a too brief hour at Salisbury, it may possibly interest a few if I give my thoughts on some of the birds collected there.

We poultry fanciers all know too well that June is not the month to see our birds in the best trim. A coat that has to be donned every day, wet or dry, even though carefully brushed at night, will show traces of wear, even under the most careful management: what wonder, then, if our pets after three or four months of constant wear, have plumage less brilliant than of yore? The brilliancy of plumage in the majority of the specimens had certainly deteriorated, yet I must confess that there were some very striking exceptions; notably amongst these the first-prize single Game cock exhibited by the Rev. A. G. Brooke, the prize Partridge Cochins of Mr. Stephens, the Polands and Silver-spangled Hamburghs belonging to Mr. Beldon.

But to the catalogue. The aristocratic Spaniards are always treated as amongst the *élite* of our feathered friends by the Bath and West of England Society; exceptionally with the Coloured Dorkings, they were offered three prizes. There were eight entries of the former, eighteen of the latter, as compared to twenty entries of Dark Brahmas for two

prizes; but to this point I will return. The entries of *Spanish* were certainly meagre in numbers, and excepting the Bristol pens, which were easily first and second, I should call them equally so in quality. In the first-prize pen there was already a divorce, the gentleman behaving very badly. Something of the same kind, I presume, had happened to the first-prize *Dorking* pen, Lady Holmesdale's, as the hen alone occupied the pen, and I could not see the cock. The hen, if I mistake not, was one out of the pen with which her ladyship obtained the prize, *par excellence*, at the Clifton Show, in January last. The hen is certainly splendid in build, and, I expect, in weight, but in my eyes, without the pendulous comb that a single-combed Dorking hen ought to have. Several of the Dorking cocks had their fourth and fifth claws some distance up the leg, so high up that as the birds stood erect, they rested only three claws on the ground, the hinder claw being in some cases half an inch from the ground; this I cannot consider any improvement to a Dorking foot. In White Dorkings, Mr. T. P. Edwards lost all chance, as he did also in the White-crested Black Polands, by sending two hens instead of one in each pen. Other exhibitors committed the same error, and a pen in the Buff Cochin class would certainly have been placed, but for a similar mistake.

The *Cochin* classes, especially the Buffs, were better filled than last year, when five entries contested precedence, and three prizes were offered. I liked the Partridge Cochin birds of Mr. Stephens much the best, they were to my fancy among the gems of the Exhibition. The White Cochins have degenerated, or else my mental visions of the past do not agree with the examples shown at Salisbury.

I scanned my own pets, the *Brahma Pootra* classes, somewhat closely. The Dark headed the poll as to numbers, with the exception of the variety class—twenty entries—the Light made twelve more—thirty-two pens, but only eight were in the prize list. Mr. Boyle headed the Dark class with a large, well-coloured and feathered pen, but the cock was very stilty; as a friend remarked to me, you might drive a coach and four between his legs. It appeared to me that the bird was deficient in depth of chest, and this made his legs appear objectionably long. I greatly preferred Mr. J. K. Fowler's second-prize pen. Mr. Fowler had also a pretty pair of chickens unnoticed, the pullet a beautiful bird. Another pair of chickens was shown in this class, that ought to have been amongst the Light Brahmas. These were perfectly white, and but for the pea-comb might have passed well for White Cochins. They would probably have received some notice in their proper class. The Dark class generally I considered weak in leg-feathering; but with this verdict as to the Dark, what shall I say as regards the Light? There was only one pen that I noticed fairly feathered, the colour very nondescript, as the breast of the cock was black, or nearly so, and the back of the hen brownish. This pen was fairly feathered, especially the hen; the other pens were lamentably deficient in this, to me, most important point. Seriously, less trimming of the legs than some of the Game exhibited had endured about their faces, would have rendered the shanks of many birds, even those noticed by the Judges, perfectly bare. The length, too, of some of the shanks in this class, if bare, would have helped to show that our friend, "TREVOR, OTHERWISE NEWMARKET," might be right as to the Malay origin. Again I lift the warning finger against the naked hock, as certain ultimately to develope the naked shank. I write most impartially. I did not exhibit Brahmas, possibly I shall not do so again, until this extreme horror of the covered hock has somewhat moderated; but if the class of Light Brahmas is to be taken at all as a type of those from which the light birds are bred, and be it remembered some of our most successful exhibitors showed, deterioration has thoroughly set in, and the naked hock is rapidly fulfilling my prophecy.

The *Game* classes were well filled, and contained some beautiful specimens, so I thought; but, perhaps, "our Game critic" was there, and I forbear to say more than that the tweezers had been diligently used in many of the pens, and those in which this precaution had been neglected had not the ghost of a chance. I think the Bath and West of England Society has a rule against trimming, too!

Mr. F. Pittis, jun., was first and second in Golden-pencilled *Hamburghs*. Both the cocks had good earlobes; but both, especially the first-prize bird, had stains of white over the red face in patches; this, certainly, is no improvement to the breed. Many of the combs in this class were large and coarse, and not a few earlobes blushed, I presume at my impudence in remarking them. I thought the Spangled birds the best. *Polands* were few, alas! too few; but they were very beautiful. I preferred Mr. Belden's Silvers; nearly every pen was decorated.

Shall I say that I regretted the paucity of entries in the next class —*Malays?* I might certainly have been differently placed; as it was, I thrashed everybody there, only there was nobody to thrash! Both Mr. Cooper, of Limerick, and the Rev. A. G. Brooke showed other birds, and I regret they did not enter their Malays. Bath and West of England folk have stuck to this class for a long time. Can Malay fanciers—alas, their name is not legion, expect this to go on when they refrain from entering the lists?

The Any other distinct variety class gave the Judges very great trouble, so report says. It is quite necessary that an alteration should be made here. The Houdans, La Flèche, Crève Cœurs, &c., might be grouped together, as I have before suggested, into a class under the heading of "French Fowls." At Salisbury with such a class there would have been a dozen entries. I greatly admired the Crève—no; what am I writing? I do not think I ever can—no! it was the Cuckoo Cochins. They were awarded second, or extra second prize, and very beautiful I thought they looked.

The single cock Spanish were very poor; one or two had been good, and one or two never would be. In the Dorking class was a beautiful unnoticed white bird, very large, but with a single comb. He had the deformed spur, now so often seen, the spur growing outside the leg; still, I thought him the best bird in the class. The noticed Cochins were very good. Mr.. Boyle was first in Brahmas; again a goodly number of entries. The first-prize cock, a beautiful bird, was very nearly blind. I noticed a cock in pen 57, I think, that was also in the same condition. The Game, as I have said before, was headed by a bird in beautiful condition, belonging to the Rev. A. G. Brooke. Silver Polands were first in the Any other variety, Crève Cœur second.

Ducks were good, I should imagine. The first and second-prize pens in the Any other variety class were charming specimens; but what they were the catalogue failed to inform us.

The *Bantam* classes I only glanced at. Gold or Silver-laced, truly, —Cæsar and Pompey very much alike, especially Cæsar; it really was hard to say which was which. It is very sad to think that this beautiful mongrel, if you will, but still most beautiful breed, should fade away; but it appears by no means improbable.

As I have already remarked, the Brahmas entered in largest numbers. I only deduce from this fact that great shows should offer the same prizes in amount to all the classes that generally fill fairly. The promoters do not know, and cannot possibly fathom the eccentricities of entries. Who could foresee the position of Brahmas this year? And who, remembering that last year Malays beat Buff Cochin and some other classes, who, I repeat, could foresee the solitary entry? I do not intend to argue from this that Malays should have as large prizes as Buff Cochin and the more useful classes; they do not deserve it, I am sorry to say. The change from two hens to one—a point I have constantly advocated in these pages, was tried for the first time. How delighted the poor birds must have been, for the glorious summer so prayed for by us mortals did not certainly add to the comforts of our poor prisoners. Nearly every class showed this more or less: the open beak, the panting chest, the extended wings, told how they suffered. The birds were most carefully attended to—too much food, if anything, being given; but the hard barley—not the finest specimen, by-the-by, that strewed the pens which were untenanted, showed the great error committed in the first meal offered to the birds. It is well known now, and frequently is acted on, that soft food, and that sparingly given, should be the first meal; if this precaution is necessary at Christmas, it is doubly imperative at this season of the year. I did not notice a single pen ticketed "sold." This was strange, I think; but Tuesday was my day of visiting the Show. The catalogue, as I purchased it, was minus the prize list.—Y. B. A. Z.

VITALITY RETAINED IN CHILLED EGGS.

I SAT a hen on eleven Duck eggs on May 13th. The nest was in a tea-chest, and there was a row of such for other hens to lay in, and the position being high and, as I thought, too dry, considering the habits of the Duck, I used generally to sprinkle the eggs when the hen was off. After she had sat a fortnight, however, more effectually to moisten the eggs I put under them some damp short grass half made into hay, and to my surprise twenty-four hours afterwards I found the old favourite Game hen (which had always been so good a sitter and mother), on a chalk egg in the next box—the eggs as cold as stones, and damp too. I put her on them, hoping against hope that they might hatch, and determined that she should have her sit out. Her time was up on the 10th of June, and to my surprise nearly all the eggs were chipped on the 9th, and she hatched the whole of the eleven eggs, which are now fine healthy little ducklings. I am sure she was off her eggs quite twenty-four hours.—PETER HAMMOND.

BAR-FRAME HIVES.

IN the latter part of the last paragraph but one of "Our Letter Box," page 402, I find the bar-frame system of hive referred to as "of German and American invention." Perhaps you will do me the favour to allow me to state that the bar-frame hive (or skeleton hive within a hive or box), which has been found to be the only approach to the natural "habitat" of the honey bee, may be used in all climates, and has superseded the advantages that straw hives had previously held over wooden boxes as non-conductors of heat and absorbents of moisture, was originally the invention of an Englishman, and was first introduced by Major Munn in his bar-frame hive, or skeleton hive within a hive, many years ago. I therefore beg to state that the invention of the bar-frame hive is due to this country (England), and it is not either of German or American origin.—SUDBURY.

[The rudiments of the modern rectangular frame hives may

certainly be discerned in the three-cornered frames of the very ingenious but somewhat unpractical "bar-and-frame hive" invented and patented by Major Munn, and described by him in a pamphlet first published in 1844. The validity of Mr. Langstroth's patent in America has, in point of fact, been unavailingly disputed on this very ground. If, however, we are to go back to rudiments and first principles, we should be inclined to ascribe the original invention to Huber, who, during the last century, used rectangular frame, or, as he denominated them, "leaf" hives, which only require the addition of an outside casing to approximate very nearly to the German frame hives of the present day. Upon the whole, therefore, we are disposed to indorse the decision arrived at by the trans-Atlantic law courts, and consider that we are indebted to the Baron von Berlepsch in Germany, and the Rev. L. L. Langstroth in America, for the invention of the practical and convenient frame hives now in such general use and high repute amongst us. We may add, moreover, that we do not find that the frame hive, or skeleton hive within a hive or box, supersedes the advantages which straw holds over wood as a non-conductor of heat, and that for this reason we much prefer frame hives made in straw to wooden ones, even when these latter possess the advantage (?) of the most carefully-devised means of ventilation.]

BEES AND BEE-KEEPING IN EGYPT.

(*Concluded from page* 420.)

The Arab holds the erroneous opinion that at the time of swarming there are several queens in one and the same hive; and that if the stock does not swarm, or he does not divide it, the old mother is always killed by the young queens.

6. "In the middle of summer (August), when the Nile rises and overflows its banks, the Egyptian bee-master cuts out the honeycombs. Whilst this is being done the entrance is stopped, and the disc at the back of the hive being removed, the bees are driven towards the front by means of smoke. A knife having been used to loosen them at the top, perhaps three-fifths of the honey-laden circular-shaped combs are taken out. Combs containing brood-cells are not meddled with; and if at any time the Arab by mistake takes out a comb containing eggs, larvæ, or sealed brood, he immediately returns it again. The destruction of bees by sulphur is unknown."

In Egypt they also follow the swarming and depriving* system. To destroy brood is there held as a sin. What, indeed, would Soliman call those German bee-keepers who teach that at the time of the blooming of the willow (the end of March or beginning of April), one should cut out of the stocks all empty and brood-combs up to the sealed honey at the top? Verily all that they do in strange lands and distant parts of the earth is not so much amiss.

7. "Soliman is truly a great smoker, yet he never employs tobacco in his operations, but smokes bees only with dried cowdung."

I have before stated that the Egyptian bee stings only when irritated, and I now repeat the same in order to avoid mistakes; but on the other hand, if irritated it is extremely vicious.

I at first operated on the imported colony without smoke; and as I was neither stung nor otherwise molested by the bees, I could then with truth assert that the Egyptian bee did not sting. About four weeks afterwards I made use of cigar-smoke when withdrawing an Egyptian brood-comb in order to remove it. I forthwith received eleven stings in the face and five in the hands. The other day I purposely operated with tobacco-smoke, and, having on no bee-cap, was compelled to run away. All recent observations go to prove that tobacco-smoke excites the greatest wrath in the Egyptian bee. With German and Italian bees the human breath produces the same effect. If the ire of an Egyptian stock is once excited, it remains for a long time extremely vicious, and when it has at last calmed down, we need use but a few whiffs of tobacco-smoke to see the rage of the little insect break out again in its full fury. We can understand with what spirit the Egyptian bee sets upon people, when we consider the extraordinary agility and vivacity of the insect. In order to subdue its irritation I use the smoke of decayed willow wood (touchwood), and this converts its courage into embarrassment, despondency, and dread. They will even then fly at the operator, circle round him like mad, and pitch on his face, hands, &c., curving themselves at the same time as if they would sting, but mostly fly off again without having done so. I have not yet tried upon the Egyptians the effect of smoke from dried cowdung.

8. "The Egyptian-cylinder hives are four feet long,† and are made of a compost of Nile mud and cowdung. The Arab makes a mould of reeds, round which he plasters the well-kneaded material to the thickness of about 3 inches. When the cylinder which is thus formed becomes dry, the reedwork is withdrawn. Straw hives are unknown in any part of Egypt. In Upper Egypt, in addition to these cylinders, they also use as bee-hives moveable pots and pans formed of the same material. Stray swarms are frequently discovered on the ground, when, if the finder has not the courage to hive them, and the swarm be on his own land, he takes Nile mud mixed with cowdung, and builds a little hut in the form of an oven, closing up the hole which he has left by means of a door formed of the same material."

Travellers tell us not unfrequently of bee-hives which they have seen in Egypt. So, for example, De Maillet in his *Description de l'Egypte* speaks of "hives," "bee-hives," and "honey-hives." Among the Egyptian "bee-hives" they have not, up to the present time, contrived straw hives, but only cylinders, pots, &c., formed of Nile mud. There is positively no reason whatever for supposing that the ancient Egyptians used straw hives, since straw is, on account of its retention of heat, a most unfit material for bee-hives in this country.

9. "The Egyptians place their bee-hives as near as possible to the clover fields. In the immediate neighbourhood of the cylinder-hives, which are piled up like drain-pipes, is erected a dwelling for the bee-watchman."

Bees collect the most honey from clover. The clover which is so abundantly cultivated in Egypt, Trifolium alexandrinum, should also be cultivated by the Berlin Acclimatisation Society in the experimental fields in Berlin, where, through sowing the original seed, they had such a brilliant result in the year 1862. The plant is an annual, and the seed raised, even on good soil, in this locality, is wanting in the vigour necessary to produce the superior clover which we find in its native country. To import seed annually would, with the high cost of transport and the doubtfulness of the supply, be doubly disadvantageous.

10. "Travelling with bee-stocks is no longer seen in Egypt."

According to various accounts, the ancient Egyptians practised a profitable system of migratory bee-keeping. De Maillet related (1740), that they then still made use of the Nile in order to obtain a rich honey harvest. "In Egypt they have preserved a custom, introduced by the ancients, of maintaining bees in a very peculiar manner. Sainfoin is first sown towards the end of October, when the Nile subsides. As Upper Egypt is hotter than Lower Egypt, and the inundation sooner disappears, the sainfoin there grows and flowers earlier. They, therefore, send their bee-hives from Lower Egypt to the south, in order that the bees may gather from the flowers. The bee-hives are all numbered and piled in a pyramidal form on Nile boats. The bees pasture for some days in the fields, and when it is believed that the chief harvest is over, the boat moves two or three miles northwards, and halts again so long as the bees can profitably remain. At last, in the beginning of February, the boatman returns to the sea and restores the stocks to their owners." Niebuhr also describes migratory bee-keeping in Nile boats. From verbal information imparted to Dr. Gerstäcker, we learn that neither Ehrenberg nor Dr. Hartmann observed during their travels the transportation of bee-hives on the Nile. Hammerschmidt's careful inquiries in the year 1865 have established the fact, that at present migratory bee-keeping is not pursued in Egypt. All modern accounts, therefore, which represent migratory bee-keeping as being still customary in that country, are, of course, unfounded.

11. "The worst enemy which the bees have in Egypt is a long slender wasp, or humble-bee, with a red body. In the latter part of the summer this insect sets itself before the entrance of the hive and kills every bee that comes out. At this season, therefore, a child is stationed in front of the hives with a large fan to drive away the wasps. In the year 1865 the Arab Soliman had in a short time no less than eighteen out of a hundred stocks so completely plundered that they died, and all through the carelessness of the child to whom the watch was intrusted."

What Egyptian insect may be meant by the red-bodied wasp, or humble-bee, I am unable to learn. I hope, however, that those naturalists who are among the readers of our bee

* This deprivation is effected by cutting combs out of the hives.—A Devonshire Bee-keeper.

† About 3 feet 10 inches English measure.

Journal will be able to determine its name from this insufficient description.

12. "W. Hammerschmidt, the photographer, had promised me a photograph of the Arab Soliman, undoubtedly the greatest Egyptian apiarian. At my request, also, Soliman declared that he would gladly permit himself to be photographed; but he soon changed his mind. Even the most civilised Arab cannot understand the nature of the photograph, and therefore views the art as the work of the devil, terrifying accordingly to the ordinary Bedouins and Fellaheen. Friend Soliman very soon began to allege all manner of excuses, such as that he suffered from rheumatism, and was unable to go when Herr Hammerschmidt invited him to accompany him and have his likeness taken; so that all I obtained from the old Soliman was an exchange of compliments."

The reader may, perhaps, be enabled from the information which I have set before him to picture to himself Egyptian bee-keeping. I am indebted for this information almost entirely to Herr Hammerschmidt, who has passed nearly a generation in Egypt, and is a perfect master of the Arabian language, so that an understanding with the Arab became easy. Herr Hammerschmidt obtained answers to a number of questions which I had written, and noted them down immediately. In order not to pervert the sense of Herr Hammerschmidt's memoranda, I have transcribed them almost literally.

We have been far away from home, and right glad are we to be safe back again with wife and child. We intend next to make an excursion to Greece, in order to report upon the bee-keeping in the convent of Cæsarea, one league from Athens, on the front spur of the Hymettus.—W. Vogel.

MEAD OR METHEGLIN. *versus* HONEY BEER.

The American receipt at page 336 for mead or metheglin is very good, and "W. H. S." may, amidst distracting counsels, unhesitatingly trust to it; but a large handful of elder flowers would be much too great a proportion for the palates of nine persons out of ten. One ounce of the dried flowers to a ten-gallon cask would be safer. Elder flowers are very searching, and when wine or anything else is over-flavoured with them, the liquor is generally pronounced to be very disagreeable. Let me also advise, that the "lees remaining in the cask" be thrown away; they are useless after fermentation. I can advise with some authority, as I have been a maker of mead for years. I sent a bottle of it up to one of the Royal Horticultural Society's meetings last April twelvemonth, along with about thirty samples of home-made grape and other wines for judgment. The award my mead gained was this:—"Very disagreeable!" I had previously arrived at the conclusion that mead is not liked as a beverage by the majority of people in these times. Our forefathers were pagans, and considered their mead only sufficiently worthy for the halls of Valhalla, their heaven, to be drunk there in reward for bravery, out of the skulls of the enemies whom they had slaughtered during life! For my part, then, I feel sorry for our forefathers, and I only intend making mead in future for the purpose of turning it into vinegar, because I now manufacture a drink out of honey infinitely superior, I think, for the purpose of quenching thirst. So did the judges, as the award they gave to a bottle of honey beer was, "Very good indeed—a very successful experiment." A bottle of mead-vinegar also gained the following character:—"A very first-class vinegar with a sauce flavour."

I will consider no brewing-plant or fixtures of any description as being necessary, excepting the copper, which would be found to be in most cases already set; but that which I use for my small brewings of honey beer is made of galvanised iron, and holds nine gallons. I temporarily fix it over the kitchen grate. I prefer working the liquor in a large, glazed, earthenware pan, as when a wooden-tub has not been previously used for working malt liquor, it is apt to absorb much of the saccharine matter. We must, of course, have either a large stone bottle or cask to contain the beer, and it should be sweet and in good order. A brewing thermometer costing 3*s.* 6*d.*, and one of Roberts's saccharometers, which costs 6*s.*, are very desirable, as by them the temperature and specific gravity, or sweetness, are correctly shown, entirely doing away with guesswork. The most certain way to procure good hops is to order them from the most respectable dealers. A chief consideration, also, is the barm, or yeast. To procure it fresh and good, find out if some neighbour has lately been brewing, for it is much more likely to be obtained genuine from a private source than from a public-house, in these days of nux vomica, strychnine, and other additions. Half a pint of ale barm, or still better half as much again of small beer yeast, would be sufficient for our present six-gallon brewing; but whatever quantity may be required to eventually fill the jar or cask, allow one-third more water to compensate for waste by evaporation during the boiling, and to make sure of enough for the repeated filling-up of the cask during the working process. Some people prefer hard water, but others say soft water is best to brew malt liquor with. I never in my practice could perceive any difference. I use soft water in brewing honey beer, and the preference seems reasonable; at any rate, when using the saccharometer the temperature of the liquid operated upon must be tested by the thermometer, and brought up or lowered to 60°.

Now, I shall suppose we have arrived at a time—say September, when the bees have quite done honey gathering, that their superfluous stores are taken, and the honey—at least as much of it as will do so without much breaking the combs—run off; then what remains in the combs reclaim by emptying the contents of the canvas bags into a pan, with two quarts of water to two quarts of the honeycomb, first making the water dissolve what honey adheres to the bags by rinsing and wringing them in it. Occasionally stir the mash well with a wooden spoon, and at the expiration of three or four days strain the liquid through a bag or bags, sufficiently fine in their texture to retain every particle of the wax, into a large pan. Measure it, and add the desired quantity of water to compose the brewing. Prove the temperature by the thermometer, and if it is not 60° make it so by adding some hot water. Now, for strict economy's sake, collect any odds and ends of last year's honey remaining uselessly on hand, or any of that of the present year which appears discoloured, or not of sufficient quality to command a first-rate market price, and keep mixing it till it is quite dissolved and blended with the water in the pan. Continue to test the sweetened water with the saccharometer till the latter floats at the degree or specific gravity of 40°, marked on its index-plate (equal to 200° by Thompson's saccharometer, a more scientific and expensive instrument, costing at least ten times as much as Roberts's)—that is, equal to within a fraction of 3½ lbs. of honey to the gallon of water.

Supposing the pan to contain for our six-gallon brewing nine gallons of what I shall call sweet wort, we will immediately enter it into the boiler, and there add to it not quite half a pound of hops, rubbing and separating them well between the hands, as we do so incorporating them well with the liquor, using a large wooden spoon, and not interfering again till it begins to boil. Watch it narrowly, for if, through negligence, it should boil over at this stage, almost before you can think it will be all out of the copper. As soon as the hops heave and break, and foam appears through the fissures, look at the clock. The process must now have your undivided attention for about an hour; allow the liquor to boil freely for that time, coaxing it within bounds with the mash stick or wooden spoon; but if it persists in boiling too violently damp the fire with some moistened slack coal, which it is advisable to have at hand. After the first hour the liquid will naturally boil more gently; then cast into it about 2 ozs. of salt. Allow it to simmer gently an hour and a half longer: "A slow brewer and a quick baker" is a proverb. Clear, well-flavoured beer, let it be made either with malt or honey, to stand the proof of keeping cannot be had unless it be well boiled, nor can the virtue be extracted from malt unless it be well mashed. Now place a tub near the copper, suspend a sieve, or strainer of that sort, over the tub, and lade the beer from the boiler into the strainer, where the hops will be retained, and this done, immediately pour some water into the boiler, if it be a fixture, to prevent the fire burning a hole in the bottom. Move off the strained beer to a cool place (my plan is to carry it at once into the cellar and enter it into a cooler); in doing so be careful not to spill any, as we are brewing to close measure.

I have now said all that I think necessary to initiate cottagers who may be the possessors of but a few bee hives, into what large brewers in my native county of Suffolk sneer at as "tea-kettle brewings." But never mind, we cannot be all large brewers; and "tea-kettle brewers" do know what they drink, and so far as my observations of them have gone they are inclined to keep sober. I want to knock at the door of the cottage *ornée* as well as that of the cottage proper, so I will finish this paper on the supposition that we are brewing fifty gallons of honey beer, and point out the manner in which the fermentation of the larger quantity should be conducted, the process being the same in both cases, only that the larger quantity requires more time, and there is more complication attending its management which it will be as well to explain.

The working tub must not be placed in the way of cold draughts, but close to the cask intended to be filled. Tilt the tub, by placing something for the edge of its bottom to rest upon, and then pour into it about six gallons of beer set previously apart to cool. Plunge the thermometer into it, and make sure that its temperature is lowered to 70° at least. This temperature (milkwarm), is the proper degree of heat to apply the yeast, which must be thoroughly mixed with the beer; then place the lading-bucket, which should be made of wood, with its handle inverted, in the midst of it, and this will be found to considerably expedite the fermentation, which invariably begins at the point of contact with the bucket. Separate from the cooler double the quantity of beer just set to work in a different tub, to be added to that in the working tub when the ferment is causing a white froth to be formed upon the surface. Be very particular as to this; until a white "head" is well formed over do not add more beer, or fermentation may be checked in the beginning, and the working rendered precarious afterwards. Let the formation of the "head" act as a guide for future additions, and whenever one is made, separate more beer to become cooled, each time doubling the quantity. Of course, you have to untilt the working-tub when you add the second quantity. Malt liquor is set to work exactly in the same manner as I have just described, and should you previously have been a brewer of it, do not become frightened at the more sluggish fermentation of honey beer. The process of fermentation is longer, and never so active as in beer

made from malt. Should the honey beer cool down too much in the cooler before it can all be got together, bring up its temperature by reheating a portion of it in a saucepan, or prevent the escape of heat by covering the cooler over with some sacks or old carpeting. Patience is a virtue in carrying out the fermentation of honey beer, as I believe it to be in most other operations.

Now, we will place our cask firmly and level on a skeleton tram, elevated a foot or so from the floor, so that by a free circulation of air beneath it may be preserved from damp and injury. Make two cork-holes, or one as the case may be; two holes are better, one below the other in the centre of the barrel. Take out the vent-peg, allow the bunghole to lean slightly to one side for the purpose of casting off the scum, because, as I just mentioned, the fermentation is sluggish, and will scarcely if ever render a working-tube necessary; slip a pan under the barrel to catch the scum, adjust the tun-pail in the bung-hole, and the vessel is ready to be filled. Directly the beer is all in the working-tub, let this part of the proceeding be completed, and when the cask is nearly full froth will issue violently, then take away the tun-pail, complete the filling-up with a spouted jug quietly, and remove the pan or other vessel from beneath; empty it and replace it. Should the filling of the barrel be done in the evening, it would be as well to rise in the middle of the night and attend to it in case the fermentation should have begun and more liquor is wanted to keep the cask full. Now the necessity will be seen for having some to spare for that purpose.

In the event of the beer showing no sign of working in the barrel after the expiration of forty-eight hours, it will be necessary to encourage it to do so. Take a double handful of flour, place it on a plate before the fire, and stir to prevent its burning till it becomes quite hot, grating into it in the meantime about 1 oz. of ginger. Enter this by degrees with the left hand in at the bunghole, and keep stirring it about the liquor in the cask with a stout lath quickly with the right hand, so as thoroughly to mix the whole, and, doubtless, the fermentation will soon commence. The temperature of the place where the cask is set to work should, if possible, not be much below 60°. No given time can be stated when fermentation will cease, but it must not be allowed to go on too long, and as soon as it becomes gentle, and the liquor has become apparently fine, rack it off. At this stage the saccharometer would be found of the greatest consequence, as this is just the time when nine people out of ten allow their wines, &c., to enter into the acetous fermentation unwittingly, from not knowing the specific gravity. As soon as the liquor has attenuated itself by fermentation to 9°, by Roberts's saccharometer, which can be ascertained by occasionally floating the instrument at the bunghole, the contents of the cask should be immediately racked off, and the settlings or lees rinsed and drained from the barrel, mixed with twice their bulk of water, and applied to the roots of the rose trees showing the most blossom-buds.

After having cleaned the cask, turn it bunghole downwards, and fix it in that position. Then at the end of an old iron spoon place about 1 oz. of flowers of sulphur, set light to it by the flame of a candle, place it at the mouth of the bunghole, and allow the fumes to enter the barrel. As soon as the sulphur is burnt out, replace the cask, and enter the honey beer into it again immediately. Further fermentation will by this proceeding be nearly if not entirely arrested, and there will be no danger of the liquor becoming sour. It has also the effect of fining down and brightening it.

The cask may safely be bunged down tightly in three weeks after the racking. I ought, perhaps, to explain how to do that also. Force in the cork at the bottom of the barrel and allow the beer to escape into a cooler; tilt the vessel when it begins to run slowly until the thick grounds are perceived to escape; then untilt immediately, fasten in a new cork, and proceed as above stated. An underground cellar is always to be preferred, on account of its being warm in winter and cool in summer. We cottagers cannot often command such, but, wherever it may be, an even temperature of 50° is desirable. Frost and strong light should be avoided, and gleams of sun must be as carefully excluded as from a dairy.

DIGEST.

To make a Strong Honey beer.

Quantity to be brewed ..	50 galls.
Water required.....	67 galls.
Proper temperature of water to prove by saccharometer	60°
Proper sweetness of wort by Roberts's saccharometer	40°
Or, quantity of honey at 8¾ lbs. per gallon.....	234½ lbs.
Do. of hops if required to keep 12 months	4 lbs.
Do. of hops if for 6 months	3 lbs.
Do. of barm for working	3 pints
Time for boiling the beer	2½ hrs.
A good handful of salt thrown in after first hour's boiling.	
Quantity to begin to set to work with	6 galls.
Proper heat to set to work	70°
Time for brewing—September or October.	

—UPWARDS AND ONWARDS.

DIGEST.

A Table Honey beer Brewing.

Quantity to be brewed ..	50 galls.
Do. of water required....	67 galls.
Do. of honey, 2 lbs. per gallon	134 lbs.
Do. of hops	2 lbs.
Do. of barm for working..	2 qrts.
The table beer requires a larger proportion of barm to carry out the fermentation than the strong beer.	
Time for boiling	2½ hrs.
A good handful of salt thrown in after first hour's boiling.	
Quantity to begin the working	5 galls.
Proper temperature to set to work	80°
Times for brewing—In the spring and summer as wanted, and to be drunk directly it is racked and becomes fine in the cask.	

BEES AT THE MANCHESTER NATIONAL HORTICULTURAL EXHIBITION.—We learn from the *Manchester Courier* that at the National Horticultural Exhibition recently held at the Botanical Gardens, Old Trafford, Mr. Carr exhibited two stocks of Ligurian bees; one being in an "improved observatory revolving bar-frame hive," and the other in an "improved unicomb observatory revolving bar-frame hive." He also exhibited what is stated to be "the finest bell-glass filled with upwards of 32 lbs. of the most splendid honeycomb ever collected in Lancashire," and frames filled with honeycombs weighing from 6 to 7 lbs. each. Our contemporary pronounces the exhibition to have been altogether most successful.

OUR LETTER BOX.

CHICKENS DYING (*An old Cocker*).—The present warm weather will be the most effectual remedy for the diarrhœa in your chickens. A little bread soaked in ale once a-day, and a good supply of lettuce leaves to peck will be good treatment, in addition to oats, grits, and soft food.

FOOD FOR BANTAM CHICKENS (*M. B.*).—Custard and oatmeal would make very good food for Bantam or any other chickens. We should not think it too fattening, but we should give plainer food with it, both for a change and to prevent cloying. We do not know the Canary wine.

HENS SOLD FOR PULLETS (*Justitia*).—Birds of 1866 would not be considered pullets in June, 1867. A pullet is always considered a bird of the year. There is no age that constitutes a pullet or otherwise, after the end of the year in which it was hatched. Thus, if it could be proved, a bird hatched on the last day of December, 1866, could not be shown in the pullet classes at Birmingham next December; but one hatched on the 1st of January would be strictly within the rules, although the difference in age would be only a few hours. At shows held after Christmas, if there are pullet classes, it is thought advisable to add to the word "pullet," hatched in 1865, 6, 7, as the case may be. We have pullets of this year that show signs of being broody. (*G. H. W.*).—You should not be put to any expense in the matter. We do not think you have been treated aright in the transaction. You are unfortunate enough to obtain only three chickens from two sittings of eggs. The cockerel appears to be good, the pullets not good enough to exhibit with hope of success. You apply for two pullets, and choose the highest priced, in order to make an exhibition pen. This must consist of all chickens or all adults, unless it be for open competition in an all-aged class. A cock hatched in 1867, and two hens hatched in 1866, would not form a pen. Late birds are not desirable, and those now eleven months old must have been hatched last August. Those sent to you are hens, and cannot possibly be described as pullets.

INCUBATOR REGULATOR.—In answer to "K.," I recollect seeing such a thing many years ago in Kemp's shop for chemical apparatus, in Edinburgh. The regulator was not for sale, but was at work in the shop, something requiring a fixed temperature under boiling point for its preparation was placed in a water-bath, and a thermometer in the water-bath regulated the flow of gas. I cannot now remember the form of connection between the thermometer and the gas-pipe; but if Kemp's business is still carried on in Infirmary Street, close to the University, some of your Edinburgh subscribers or correspondents might procure a drawing of the apparatus for you.—MONTICOLA.

COCK'S FEET CRAMPED (*A. W.*).—Give him bread soaked in ale once daily, and plenty of lettuce leaves; keep him in a warm dry place. When settled dry and warm weather arrives, let him go where he pleases.

CAMPHOR ADMINISTERED TO CURE GAPES (*T. V.*).—The dose for a chicken five or six weeks old is a pill of camphor the size of a small garden pea. Where the camphor julep given to them to drink is strong, they seldom require a pill. It is the odour of the camphor that kills, there is no real contact with it. It is impossible, because the parasites are in the windpipe.

FOWLS EATING EACH OTHER'S FEATHERS (*Constant Reader*).—We can only repeat the advice we gave last week. This propensity only comes to those that are in confinement. Birds that are at liberty never fall into it. It arises from a bad state of body; this is caused by confinement and deprivation of something they get when they are at liberty. We speak practically. Ours are cured by lettuce, sods of grass, and fresh earth.

CANARY'S WING-FEATHERS DISEASED AT THEIR ROOT (*C. A. J.*).—The bird with quill-end of feathers full of blood is affected with the scurf, which irritates the skin and causes the bird to peck the roots of the feathers, and makes them stick out irregularly, bleed, and fall off. Get a little cold cream at a chemist's and apply it to any parts naked with a feather. Place a small pan of lukewarm water in the cage for the bird to bathe, and if it will not bathe, take a squirt or a little in the mouth and spirt over it from behind, so that the water may go under the feathers, and let it dry before a fire if there is no sun. Repeat this on several days. Soak a piece of stale bread in hot water to extract the alum, squeeze the water out, and then add a little milk and mawseed to it and squeeze rather dry, give it to the bird while warm. Examine the cage and nest and see if there be any insects. Gas, smoke, or cold would cause the waning of the bird, also the feathers to drop off. Give plenty of air.

POULTRY MARKET.—JUNE 19.

THIS season will rank as one of the extraordinary ones. Had there been anything like the average demand, such prices would have been given as were never before heard of. There is still but a very moderate supply.

	s. d.	s. d.		s. d.	s. d.
Large Fowls.....	5 0	to 5 6	Pheasants	0 0	to 0 0
Smaller do.	3 8	4 0	Partridges	0 0	0 0
Chickens	1 9	2 0	Grouse	0 0	0 0
Goslings.....	5 0	5 6	Guinea Fowls.....	0 0	0 0
Ducklings	2 0	2 6	Rabbits.....	1 4	1 5
Pigeons	0 8	0 9	Wild do.....	0 8	0 9

WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 27—JULY 3, 1867.	Average Temperature near London. Day.	Night.	Mean.	Rain in last 40 years. Days.	Sun Rises. m. h.	Sun Sets. m. h.	Moon Rises. m. h.	Moon Sets. m. h.	Moon's Age. Days.	Clock before Sun. m. s.	Day of Year.
27	Th	Gardeners' Royal Benevolent Institution	72.9	48.1	60.0	14	45 af 3	19 af 8	54 af 0	43 af 2	25	2 38	178
28	F	[Anniversary.	73.3	49.4	61.3	16	47 3	19 8	26 1	58 3	26	2 50	179
29	S	Crystal Palace Rose Show.	72.7	48.8	60 7	12	47 3	19 8	4 2	12 5	27	3 3	180
30	Sun	2 Sunday after Trinity. [1862.	72.5	48.2	60.3	13	48 3	18 8	50 2	24 6	28	3 15	181
1	M	Princess Louis of Hesse Married.	74.8	51.1	62.9	18	49 3	18 8	44 3	28 7	●	3 27	182
2	Tu	Royal Horticultural Society's Rose Show.	73.4	51.1	62.2	15	49 3	18 3	48 4	24 8	1	3 38	183
3	W	Royal Botanic Society's Show.	74.3	50.2	62.3	17	50 3	18 8	0 6	11 9	2	3 50	184

From observations taken near London during the last forty years, the average day temperature of the week is 73.3°; and its night temperature 49.5°. The greatest heat was 91°, on the 30th, 1862; and the lowest cold 34°, on the 26th, 1864; and 30th, 1863. The greatest fall of rain was 1.18 inch.

BLOOMING PRIMULA SINENSIS A SECOND YEAR.

HOW beautiful these Primulas are! What lovely Primulas!" exclaimed my lady on her return after a year's absence from home. "We never had such fine plants or any so well bloomed before!" and my lady and her daughter were in ecstacies, for they were "fond, extremely fond of Primulas." But who is there that is not delighted to see one of those lovely flowers with its rich masses of beautifully-formed rose or carmine blossoms, and its serrated foliage? or its equally lovely masses of white, vieing in purity with the snow outside as it is falling upon the earth?

Yes, the Chinese Primula is indeed a valuable and indispensable addition to our winter-blooming plants. Who, possessing a greenhouse, however small, does not try to grow a few Primulas to grace with their presence his room during the Christmas parties? there, in the depth of winter, whispering of sunshine, and verdure, and flowers to come after all the frosts and snows. True messengers of spring they are.

"But what a pity," observed my lady, "that they will so soon have to be thrown away" "No," your ladyship, "I do not throw them away." "Then, will you plant them out in summer in the flower garden, as I have sometimes seen them at places? but the wind breaks them, and they look untidy. I never like to see them." "Well, but that is not my object. Those Primulas have a history which I will relate."

So I proceeded in my narrative.

I always sow the Primula seed about the middle of February, and as soon as the seedlings are fit to handle I pot them singly in 60-sized pots, using a compost of one-half turfy loam, one-half leaf mould, manure, and sand. Then they are placed in a warm pit for a week or two, when they will be making good growth. Then a shift is given them into pots a size larger, and they are placed on a shelf in the greenhouse, there to stay until I see them open a flower to prove them. Such as are not well fimbriated, or of well-defined colours, I at once discard. I pot the remainder in their blooming-pots, and place them back on the shelf, or in a cool pit or frame, there to stay until taken in for the winter.

The second year, however, is what I look upon as the best (the plants my lady saw were two years old); therefore, when the bloom is over I take the plants, clear them of any dead leaves or flower-stalks, and see that they are clean and healthy. I then place them in a cold pit or frame until about the middle of July, when they are re-potted, shaking off most of the old soil, but still leaving some undisturbed. I am very careful that they are clean, and not too deeply potted, as they are very impatient of moisture at the base of the leafstalks, and if potted too deeply, in dull damp weather the foliage damps off, and they look unsightly objects compared with those having good foliage.

I am also careful never to allow them to waste their strength during summer by blooming, which, if not prevented, they will do. I pinch off all flowers as soon as I see them, until I want the plants to bloom. "Then," inquired my lady, "is the plan a new one, and your own suggestion?"

"By no means. Certainly I never saw the method carried out, or even heard of it, and I have spoken to a few neighbours, who say they have not seen it tried. Still, I have every reason to believe that this course of culture is older than myself." Thus the tale ended.

Perhaps some of your readers may, like myself, have been so used to fresh seedlings every year, that they, too, have lost sight of this mode of culture. To such I would say, Try it.

Of course I always sow a pot of fresh seed every year.—J. Y., *Eccleshill Hall.*

HEATING SMALL PLANT-HOUSES.

"Subscriber" is having a small greenhouse (8 feet by 8 feet), put up, and being an amateur in but a small way, she objects to stoves that require coke, charcoal, or patent fuel, as, where she resides, such would be troublesome to procure, and expensive. She is told that a stove burning coal or slack would not do for the flowers; and, again, hot-water apparatus would be difficult to put up, the space being so small to work upon. Will you say if heating by a brick flue would do for flowers, and in that case how should it be managed so as to keep up a moist heat, which is so conducive to the well-doing of plants?

[There is so much needless mystery, and something like the making a "job" as to the heating of small greenhouses, that thousands are deterred from having these sources of pleasure close to their dwelling, and thousands more act on the advice which Mr. Tyerman, of the Liverpool Botanic Gardens, told us he frequently gives where there would be much trouble and expense in heating in winter—namely, to supply with flowering plants in summer, and to fill with ornamental-foliaged hardy evergreens in winter. This plan, however, deprives the enthusiastic amateur of the chief relish of such a house—the pleasure of growing and attending to his own plants, and keeping them on from year to year. The finest plants bought in when in bloom will never exert the peculiar pleasing influence that plants even not so fine will do when they have been reared, potted, and watered with our own hands, and otherwise tended under our own supervision. Then our pet plants become, as it were, part of ourselves, being so interwoven and blended with all our sympathies.

Again, though it is pleasant to have a greenhouse in summer, it has less attractions then, when everything out of doors is growing and flowering, and we become, if any-

thing, bewildered by the number of blooming beauties that are soliciting our attention. It is in winter, when all outside is bleak and bare, when the ground is hard, covered with snow, or the storm rages, and the pitiless rains descend, that a few plants in bloom in our windows or in a little greenhouse present their chief charms; and hence we would advise every one who has such a greenhouse to try some simple means for keeping the frost from his favourite plants. Some time ago we chronicled how large plants of Scarlet Pelargoniums stood in rather a large lofty house last winter, and had no assistance whatever in the coldest nights, except opening for a couple of hours or so the door that connected the place with the living-room. These plants lost most of their leaves, and looked rather badly in March, but now they are huge masses of scarlet, and no one would think they had come through such an ordeal. A small stove in such a place would have kept them green enough.

Now, to our correspondent, who is anxious to keep the cold out of her house, we will at once state that a stove, a flue, or hot water will do admirably for her; and as she cannot have a stove that will require prepared fuel, then, as the cheapest and quite effectual for all the purposes she wants, we would recommend an iron stove which can be set outside in summer, and that will burn coke or cinders, and have a pipe, 3 inches in diameter, to go out of the house; one of the simplest modes being removing a square of glass, and putting in a square of zinc, or galvanised or sheet iron in its place, with a hole in the centre to admit the pipe passing through. Except where a pipe can be taken from a kitchen boiler, it is very expensive in proportion to the size to heat a small house by hot water. It is much cheaper to do it by a flue. We thus heated a small house by a flue beneath the floor for little more than as many shillings as a hot-water apparatus manufacturer said he would want pounds. For so small a house we would be satisfied with a small stove.

To prevent the evil effects of dry stove heating, and to insure the moisture which our correspondent desires, two essentials must be secured. First, the stove, however small, should be large enough to permit of the firebox being fixed inside, free of the sides of the stove; and, secondly, the top of the stove should be flat, so as to permit of an iron vessel of the same size, as to width, standing on it, supplied with water. For this purpose it is best that the smoke-pipe should issue from the side near the top of the stove, instead of from the top itself, and that, after going a foot or 15 inches horizontally, it should have a joint, and go straight up through the roof. It matters not whether the stove is round or square if these conditions are attended to. For such a place as "Subscriber's," the stove might be 18 or 20 inches in height, and 1 foot in diameter or square, and the firebox inside be 7½ or 8 inches in diameter or square. The evaporating-pan might be the same width, and 8 inches deep, so as always, when much fire was used, to have a little water in it. In very severe weather a little water could also be poured on the floor near the stove. Plenty of stoves can be procured with all these conditions. The reasons why the firebox should not reach the sides were lately given. Were we to have a little stove of the kind made, then we would have a double moveable top to it, the inner part of rough plate iron, to go in a groove and to be covered with sand, and the upper to be of a somewhat ornamental character. This will both prevent the top becoming too hot, and allow of the inside centre being easily examined at any time. The draught should be regulated by openings in the ashpit door.]

POTATOES.

Early-planted Potatoes have been, I hear, much injured by the severe May frosts. Here Rivers's Royal Ashleaf, which was 9 inches high at the time of the frosts, is the only one that seems to have materially suffered. I hear that the small tubers of sorts cut down have put out young Potatoes. I bought a sack of Salmon Kidney to eat, and the price was 16s. I hope we shall have lower prices next year. I planted the following four sorts 5 inches deep on the 13th of February, under grass clods freshly broken up—namely, Grammars, Red Robins, Scotch Rocks, and Salmon Kidneys, and they are uninjured, and a capital plantation. I have had them hacked and slightly earthed up. They were previously dressed with 2 ozs. of blue vitriol to the stable-bucketful of water.

"Upwards and Onwards" was so kind as to send me several varieties, which were severely dressed with blue vitriol. Among them was Premier, the handsomest Potato I ever saw—a Kidney; I did not like it. The others, which have come up well and are very strong, having been uninjured by the frosts, were Fenn's Onwards, Pebble White, Gryffe Castle Seedling, Scotch Rocks and Yorkshire Hero (both here before), Shutford Seedling, and Prolific Seedling. Fenn's Onwards takes my fancy much, both tuber and plant. It is marked in my book, "Round, second early, first-rate." Premier is a Kidney, marked, "Splendid, first-rate." Pebble White is marked, "Kidney, late, excellent, first-rate." Gryffe Castle Seedling reads thus in my book, "Roundish oblong, rough skin, which in round Potatoes indicates fine flavour." I find that Kidney Potatoes strongly vitriolised do not come up well, neither will they stand being "chimped." I will report on some of the sorts sent. On the whole I am satisfied with prospects here. I enclose, by permission, the letter I received from "Upwards and Onwards."
—W. F. Radclyffe, *Okeford Fitzpaine.*

P.S.—"Nameless" and Yorkshire Hero were severely vitriolised, planted, and dug up again before sent to "Upwards and Onwards:" hence failure. Some Potatoes are more tender than others about their eyes.

[The following is an extract from the letter of "Upwards and Onwards."]

"I have seven sorts in competition in sheltered corners; these escaped from the frosts scathless. Those in the open ground, on my usual ridge plan, fared worse, though much better than those of my neighbours who planted on the flat. It is worthy of observation that one row of the old Ashleaf Kidney, which I planted on the flat between two rows of Asparagus, for the purpose of early household use, without earthing even, were killed down to the ground, even to the destruction of some of the tubers. In short, the Potatoes have suffered more in these parts from the severe pinching they had than has been known in the memory of the 'oldest inhabitant.'

"I am sorry to tell you also, that the tubers to a great extent are showing no signs of recovery. Mine are now looking as 'sprack' as if nothing had happened, excepting the Ashleaf row, though I must own that Premier, Sussex Kidney, Sutton's Racehorse, and Empress Eugénie do not seem to have liked it. The Emperor Napoleon, however, stood out the frosts triumphantly; but whether it was by mere chance, or whether it is constitutionally 'frost-resisting,' it is difficult to say, for in the majority of the sorts—I have fifty kinds competing this year—a solitary top or two escaped being frostbitten. Nevertheless, as the Emperor altogether escaped, I will give it the benefit of the doubt, and call it a most 'frost-resisting' variety. Yorkshire Hero did not maintain that character with me. I have two rows of Onwards. It has a distinct, robust character, which at once distinguishes it from its compeers in this garden. We had some store tubers of the sort for dinner the day before yesterday; they were quite firm before being cooked, and quite up to the mark as regards appearance and flavour at table.

"I have upwards of one hundred young plants from the berries produced by flowers which I fertilised last year, and which will certainly yield tubers; they are the results from 164 seeds sown.

"Mr. Fish's observations about diseased Potatoes, at page 412, is another step in the direction of the electrical theory. He says, 'All at once, after a thunderstorm, followed by some days of bright sunshine, the tops showed signs of distress, &c. Another puzzling circumstance is that one end of the bed *is* still perfectly healthy.' Exactly! those which became affected were at the midstage of their growth, the age at which I have always found them most susceptible. Those at the other end of the bed were younger, and they escaped. They would have been affected like the rest if they had been of more mature growth. The cool non-electric state of the air just now is very favourable to the well-doing of Potatoes, and on this account I trust no thunder and lightning will visit us for some time."

At page 412 there is a description of a failure in Potato stems, and the question is asked if similar manifestations have been noticed. Although, probably, my garden is more than three hundred miles from the place where these symptoms have appeared, yet a precisely similar condition of things exists here (Cornwall) in my own and some neighbouring gardens.

I have carefully examined the stems which have rotted down, I find they are solely those of the Scotch Regents; Early Frames, Kidneys, Flukes, and others have no instances amongst them, and this holds good in the other gardens alluded to. From watching them and from examination of the stems, I feel

convinced that the rottenness arises from the very wet and windy season we have had. The stems with me having grown rather luxuriantly, they were violently swayed by the wind, and by degrees revolved, as it were, in the ground, and so cut their own throats; for in each instance the rottenness is found where the action such as I describe it would be felt by the stem. The other kinds to which I have referred escape, owing, I believe, to their more sturdy growth, and to having a more sheltered position. The tenderness of the Regent stem marking it out as the first victim for blight is well known; this more delicate habit, with the peculiarly unseasonable weather, with us I consider to be the cause of this failure.—Subscriber.

WHAT IS A VARIEGATED PELARGONIUM?

Many raisers of Variegated Pelargoniums are very anxious to have this matter definitely settled, so that no mistake may occur at any exhibition where they may exhibit their varieties.

At the forthcoming Bury St. Edmunds Show one of the special prizes, a silver cup valued at £10 10*s.*, is offered for the best twelve seedling Variegated Pelargoniums of 1866 and 1867. Two other prizes are also offered in Classes 18 and 19 for six Variegated Pelargoniums. In Class 18 the subjects invited are described as six Variegated Pelargoniums including Nosegays, distinct varieties. There are very few Nosegays that I have seen that have more than two colours in the leaf. If Pelargoniums of the Bronze and Gold section are to be excluded from collections for which the £10 10*s.* prize is offered, what is to be done in the class for six Variegated, in which Nosegays are admissible?

I think the schedule in its present form is likely to mislead many intending exhibitors at the forthcoming Exhibition, and to occasion the jurors at that Exhibition much trouble and unpleasantness.

I maintain that any departure from the normal state must be variegation. If, as I understand by a communication lately received, a collection competing for the £10 10*s.* prize would be disqualified if containing plants belonging to the Bronze and Gold section, then I say the old Manglesii, Flower of the Day, Bijou, &c., are no longer Variegated Pelargoniums; and if not, what are they? I shall, therefore, feel obliged if the Editors will give us the benefit of their opinion. I also hope correspondents will give us their views on the matter.

I enclose leaves of several of my Bronze and Gold varieties, also leaves of a new section. The latter have only two colonrs in the leaf. Several of the Bronze have three; but if the Bronze and Gold cannot be considered variegated, the leaves of the pretty varieties named above cannot be variegated. I trust the Council of the Royal Horticultural Society will inform exhibitors by advertisement as early as possible, that all varieties with leaves containing more than one colour are variegated and eligible, and that such varieties may be exhibited without being disqualified at the forthcoming Bury St. Edmunds Exhibition. If something of this sort be not done, I think few exhibitors from a distance will bring their plants to the Exhibition. Mr. D. T. Fish wishes to see everything of beauty exhibited on that occasion. I therefore hope he will give us his views on the matter, and also try to induce the Council of the Royal Horticultural Society to adopt some measure similar to that which I have suggested above.—J. Wills.

[We have no doubt, if the words of the prize list remain unexplained, that any Pelargonium having another colour in it except the ordinary green and the dark zone, or horseshoe, is admissible to compete for the County silver cup, and in Classes 18 and 19; for that prize list does not even employ the word "Zonal."

To remove all doubts, we hope that the Society's Council will publicly announce the varieties they intend to be included under the general term of "Variegated Pelargoniums."

To avoid ambiguity, Zonal Pelargoniums, we think, should be divided into four sections, each with its special designation and characteristics.

1. Zonal Pelargoniums (the old Horseshoe), having green leaves with a dark zone.

2. Variegated Zonal Pelargoniums, having green leaves with a dark zone, and edged, or otherwise marked, with white or yellow.

3. Golden Zonal Pelargoniums, having yellow leaves and a dark or coloured zone.

4. Versicolor Zonal Pelargoniums, having leaves partly green, but marked with two or more additional colours, and zone partially or entirely red.

Such a division may be considered arbitrary, but it has the great advantage of certainty—enabling competitors to foreknow clearly against what and with what they must contend. It would also proportionately lessen the difficulties of the Judges. —Eds.]

THE EDINBURGH WORKING MEN'S FLOWER SHOW.

This is fixed to take place on the 3rd of August next.

"The Show of 1866 was a complete success. It was held in the Corn Exchange, Grassmarket, on Saturday, 28th July. It is estimated that upwards of 5000 persons visited it in the course of the day, 4000 having paid 1*d.* each admission after two o'clock. In all, there were 245 competitors, 80 of whom entered in Class IV. as 'Juveniles under fifteen years of age;' and, in addition, there were about 30 exhibitors, including several nurserymen, who kindly brought forward valuable and interesting collections of plants. (At the former Show, there were only 160 competitors.) There were 481 entries of plants, &c., for competition.

"The number of successful competitors was 133, to whom were awarded 220 prizes, including a number of 'specials,' amounting in all to £21 6*s.* 9*d.*

"The unanimous opinion of the Judges was, that, compared with the Show of 1865, a most decided improvement in the quality and appearance of the plants exhibited had taken place, showing increased care and skill in culture; and testifying to the fact that the experience gained during the former year had gone far to assist in educating the people in the cultivation of flowers, even at smoky windows, and other situations equally unfavourable to floriculture.

"The Committee are pleased to announce that during the past year a permanent fund, in support of the Working Men's Flower Show, was originated by the handsome donation of £100 sterling from the late Bailie Alexander, as trustee of the late John Mackenzie, Esq., 8, Manor Place, Edinburgh, the interest of which will be applied to payment of a series of prizes to be designated the 'Mackenzie Prizes;' and the Committee hope that additions to this fund will be made from time to time by parties interested in this movement.

"A new feature of last year's Show, which imparted to it considerable interest, was the district competition—prizes having been offered for plants grown in specified districts, in addition to those open to residents in any part of the city.

"In beginning operations for the ensuing summer, the Committee would earnestly solicit a renewal of the liberality of their friends. Bills, containing full particulars relative to the Working Men's Flower Show for 1867, may be had on application to—W. P. Drummond, *Secretary*, 52, *George Street*, *Edinburgh*."

HARDY PLANTS IN FLOWER IN EARLY SPRING.

BITTON, GLOUCESTERSHIRE.

March 1. Epimedium pinnatum elegans
Erythronium dens-canis
Narcissus pumilus
Primula helvetica marginata major
„ 2. Helleborus viridis
Pulmonaria officinalis officinalis alba
„ 7. Mandragora præcox
Scilla nivalis (præcox?)
Soldanella Clusii
„ 9. Luzula sylvatica var.
„ 16. Iris tuberosa
„ 22. Apricot
Sanguinaria canadensis
„ 23. Anemone pavonina
Draba verna aizoides
Tussilago farfara farfara variegata
Scilla bifolia rubra
„ 25. Narcissus calathinus odorus cernuus
March 25. Narcissus cernuus plenus pumilus plenus Curtisii
„ 28. Anemone coronaria
Muscari botryoides, dark blue, light blue, alba, and pallens
Triteleia uniflora
Anemone Hudsoniana
Dentaria digitata
Leucojum æstivum
Puschkinia scilloides
Cardamine trifoliata
Erythronium violaceum
Peach
Nectarine
„ 30. Corydalis cava bulbosa bracteata
Narcissus tricolor
Gagea lutea
Anemone nemorosa
Cydonia japonica alba
Orobus vernus

—H. N. E.

HIGHLANDS, NEAR GRANTHAM.

In the first week of January my garden was enlivened by *Jasminum (nudiflorum, as I suppose, the yellow flowers appearing before the foliage), *Virginian Stock, Laurustinus,

*Antirrhinums; Primroses, the sulphur, red, and crimson varieties; Chrysanthemums, various colours; *Wallflowers, Heath (the pink herbaceous), Hepaticas, single pink and blue varieties; Acouite, yellow; Cowslip, yellow, and varieties; *Viola cornuta; *Roses, monthly, *La Brillante, *Auguste Mie; Pulmonaria. Those to which an asterisk is prefixed were flowering throughout the greater part of December.

In the fourth week of January I had the Hellebore or Christmas Rose, Snowdrop, Arabis albida, garden varieties of Daisy, and the yellow-striped Crocus.

By the second week of February I had Hepaticas, the double blue and pink; Wood Strawberry in flower; Crocus, white, mauve, and Drap d'Or; Hyacinth, white or Roman. In the third and fourth weeks of February:—Mezereon, Hound's-tongue, or Cynoglossum, Aubrietia, and Polyanthus.

March, owing to its severity, added little to the list; it rather indeed, diminished it. The Roses, the Chrysanthemums, the Antirrhinums, Laurustinus, and Wallflowers, were cut off, and others arrested in their growth. It produced, however, the blossoms of the Almond, Apricot, and Peach, numerous Hyacinths, and the pale yellow Van Thol Tulip.

These all grow on the slope of the high table land between Grantham and Stamford, the highest table land in England, according to the trigonometrical survey, notwithstanding that the prejudices of some have led them to speak of Lincolnshire as consisting only of fens, marshes, and bogs. My garden, however, is greatly sheltered by evergreens, and the minimum temperature in it is usually from 1° to 3° higher on the average of a week than in the vicinity of London, as registered in The Journal of Horticulture. The soil is generally loamy, and filled with small fragments of magnesian limestone, the rock being only from 3 to 5 or 6 feet below the surface. The soil of the flower-beds is, of course, more of an artificial character, having had various fertilising substances from time to time thrown upon it.—Philokepos.

ACKLAM HALL, MIDDLESBOROUGH-ON-TEES.

March	6.	Apricots, Peaches, partially in bloom
„	8.	Variegated Daisy Lungwort Elm White Dead Nettle
„	12.	Wood Primrose Shepherd's Purse Willow Aspen
„	20.	Ribes sanguineum Daffodil, double Doronicum austriacum Bellis perennis
„	22.	Dog's-tooth Violets Yellow Field Pansy
„	25.	Double White Primrose Double SulphurPrimrose Vinca minor Dandelion
„	27.	Gorse or Whin Hyacinths in the border Veronica agrestis
April	1.	Variegated Arabis Larch
„	3.	Koniga maritima
April	3.	Grape Hyacinth Double Narcissus Asarum europæum Tulips
„	9.	Anemone apenuina Auricula, various Common Box
„	18.	Sweet Gale Corchorus japonicus Corydalis bulbosa Fritillaria meleagris Almond tree Helleborus niger Honesty Rhododendrons, various
„	24.	Hoop-petticoat Narcissus Virginian Stock Wood Sorrel Snowy Mespilus Plums Pears
„	26.	Cydonia japonica White Ribes Cerastium Biebersteinii

LEAFING OF THE OAK AND ASH.

I quite agree with you concerning the leafing of the Oak and Ash. I have always found the Oak some days earlier. I take my observations from the same trees yearly where the trees are growing together. This has been the case for ten years. Unfortunately I have not the former six years' register, but I state the time of budding and leafing for the last four years.

	1864.	1865.	1866.	1867.
Oak in bud	Apr. 12th. ..	Apr. 16th. ..	Apr. 18th. ..	May 7th.
Oak in leaf	May 5th. ..	May 7th. ..	May 26th. ..	May 10th.
Ash in bud	Apr. 29th. ..	Apr. 12th. ..	May 10th. ..	May 29th.
Ash in leaf	May 16th. ..	May 20th. ..	May 29th. ..	June 5th.

I saw it stated a few weeks ago, that the Ash and Oak always come into leaf simultaneously. I think locality must have something to do with the trees from which that conclusion was derived.—R. Hawkins, *Sunderland.*

Manchester Horticultural Exhibition.—We are informed that the money taken at the gates in half-crowns and shillings will more than cover expenses; but beyond this 250 new two-guinea subscribers have been obtained, and there is no doubt but that a very large number of these will continue members, thus contributing to the permanent good of the Society. £500 obtained by extension of membership is of very much more importance than the same amount received for entrance to the Show.

DUTY-FREE TOBACCO.

For fumigating-purposes, I think an admixture of Cayenne pepper would be better than sulphur, and protect the revenue at least equally well.—G. S.

[We think so too. If sulphur is peremptorily required to be mixed with tobacco duty-free for gardening purposes, it will prevent its being employed for fumigating.]

JOTTINGS ABOUT FLOWER GARDENING.

There is often some difficulty in arranging plants in flower gardens, and even after many years' practice the task of arrangement is not always satisfactorily completed without much mental balancing of the plants employed. For instance, should we plant a flower garden of eighteen or twenty-four beds with a variety of colours, in all probability recourse will be had to Pelargoniums with variously coloured foliage. Now, here arises a difficulty. If Flower of the Day, or any of the varieties of which it may be taken as a representative, be employed, the colour of the leaves and that of the flowers will cause perplexity at once, as one or the other will not come in well in forming a proper arrangement with the Tom Thumb and the Nosegay sections.

If, on the contrary, regard is paid only to the colour of the flowers without reference to that of the leaves, the matter is more easily settled. Were I confined to one class or section of Pelargoniums in order to produce a pleasing result in a moderate-sized flower garden, I would decidedly choose the Nosegay varieties, for these offer a great variety of colours; still their foliage in general partakes more or less of a dark green hue, especially when viewed from a short distance; and I hold that a flower garden is seen to most advantage from a moderate distance if it is of some extent, has pleasing surroundings, and is of an appropriate form for displaying to advantage the living picture within. Where flower gardens are placed close to mansions with terraces where architectural embellishments are largely employed, from the architect studying only the display of his professional talent very often when the gardening artist has to perform his part towards the adornment of the residence, he is embarrassed by the massive surroundings.

I have often found a more pleasing effect produced in a flower garden by principally employing the Nosegay Pelargoniums, along with Calceolarias and two or three of the most distinct and compact-growing Verbenas, than when I availed myself of any of the light and Variegated bedding Pelargoniums. Between twelve and sixteen years ago I often encountered a similar difficulty in respect to the tartan-looking varieties of Verbenas which were then planted. Examined individually they may have been pretty, but no frame to the picture, however refreshing to look upon of itself, could compensate for, or cure the muddy appearance which many of them presented to a person at 40 or 50 yards away.

No colour can show off flowers to greater advantage than green, which affords relief to the eye, and a pleasing contrast to the colours of most the plants now used so extensively in flower gardens.

When I have wished to produce effect by the foliage, and not by the flowers, I have frequently never permitted Flower of the Day and similar Variegated Pelargoniums to flower, cutting off the blooms as soon as they appeared. Indeed, one of the most effective ribbon-borders I ever had owed its beauty entirely to the foliage. In it I had Flower of the Day and Golden Chain, with between the two a row of Perilla nankinensis, always kept to the proper height. Golden Chain was next the grass.

What I said respecting standard sorts and former favourites may apply with more or less force to Mrs. Pollock and similar beautiful varieties. If there were a greater contrast between their foliage and flowers, to what advantage could they be employed—for instance if any of them had flowers of the colour of Christine instead of red, salmon or flesh-coloured ones, which, being borne above such a glossy leaf-surface of rainbow hues, greatly diminish the effect, especially when seen from the distance of only a few yards. I never saw Mrs. Pollock look better than in a low-roofed greenhouse, where the range of vision was limited, and where all the flower-stems were removed. In

a partially shaded house, and a rather moist atmosphere, this variety is seen to great advantage; but in the open garden in the sun, particularly where the soil and subsoil are both dry and gravelly, the whole of the Mrs. Pollock class are liable to have their leaves browned. Such is the effect of soil and situation, that in one place they are not satisfactory, except in well-prepared borders and beds, whilst in others they grow as freely as Tom Thumb; but after all will they ever prove so effective as the Nosegays, when seen from a distance of, say, 40 or 50 yards?—G. Dawson.

ROYAL BOTANIC SOCIETY'S SHOW.—June 19.

It has not fallen to my lot to witness many of the great shows this year; and as this was the only one I am likely to enjoy this season, I was heartily glad to hear it pronounced by several of the most constant *habitues* one of the best. To me the exhibitions here seem not only unsurpassed but unequalled. At the Regent's Park, though no novelty is attempted, no sensational alterations made, yet the scene is ever novel and fresh. The view on entering the tent, although seen a dozen times, is still as striking and as fine as ever; and an exhibitor must feel, however he stands with his competitors, that everything has been done to make his plants look effective.

In endeavouring to give an account of the florists' flowers, I shall begin, as in duty bound, with the Roses. Here amongst the growers for sale were to be found, as usual, the finest flowers. Their stock is so large, that it is only when amateurs approach them in this respect, that they can hope to compete with them. Messrs. Mitchell, Cranston, Paul & Son, and Fraser, were the exhibitors; and the best box in the Exhibition was that shown by Mr. Cranston. These consisted of Pauline Lauszeur, Jean Goujon, Souvenir d'Elise, Madame Willermoz, Marguerite de St. Amand, Abbé Berleze, Madame Furtado, Le Rhone, Madame Julie Daran, Niphetos, Madame Boll, Souvenir d'un Ami, Dr. Andry, a truly grand Rose; Général Jacqueminot, now superseded by some of his progeny; Jules Margottin, Victor Verdier, Senateur Vaisse, Madame Knorr, Mdlle. Emain, Gloire de Dijon, and Maréchal Vaillant. Messrs. Paul & Son had some fine boxes, containing in especially good condition Lord Herbert, Duchesse de Caylus, Joseph Fiala, Alfred Colomb, and Triomphe de Rennes. Mr. Mitchell had some very fine boxes of twenty-five Roses, three trusses of each. They were La Tour de Crouy, too full, and rejected by me long ago for that reason, but here very fine; Alfred Colomb, Maurice Bernardin, Celine Gonod, John Hopper, Pierre Notting, excellent; Charles Lefebvre, still unsurpassed; Le Rhone, Madame Boll, Senateur Vaisse, Anna de Diesbach, Madame Furtado, Gloire de Ducher, Maréchal Suchet, loose; Madame Domage, ditto; Louis Van Houtte, rough; Madame Clemence Joigneaux; Maréchal Niel, fine—it is, by-the-by, a mistake to call this hardy; Charles Margottin, rough; Louise Peyronny; Adolphe Rothschild; Xavier Olibo, crooked on opening; Caroline de Sansal, and Madame Victor Verdier. Messrs. Paul and Son were second with fine flowers, containing amongst others Princesse Marie de Cambridge, Madame Fillion, Beauty of Waltham, Alba Rosea, Olivier Delhomme, François Lacharme, Achille Gonod, Madame V. Verdier, Gloire de Dijon, Xavier Olibo, Comtesse de Chabrillant, Madame Charles Wood, Marguerite de St. Amand, very fine; Pierre Notting; and Alfred Colomb, a very fine Rose. Before leaving the queen of flowers I must notice a truly regal addition, in every sense of the word, to our already numerous favourites, but in a class in which we are very deficient. I allude to Miss Ingram, a Rose raised at the Royal Gardens, Frogmore, by Mr. Ingram, the veteran and accomplished gardener at that truly regal establishment. It is a lovely white Rose with a blush centre, somewhat of the shape of the old Cabbage, perfectly hardy, having withstood the frost of January, which destroyed nearly all the light Roses in that locality. I venture to predict for it a career as an English Rose equal to John Hopper.

I suppose many will consider it rather coming down from Roses to Pansies. All I can say is, that it astonishes me that the Pansy is not more grown. It requires, indeed, as all florists' flowers do, more care than bedding plants; but I am sure the enjoyment of beholding these lovely flowers displaying their beauties in early spring, is worth the trouble. Take Messrs. Downie, Laird, & Laing's collection, which was sent up from Scotland on purpose for this Show. What beauties! The stand contained Mr. J. Graham, Waverley, Vesta, Alice Downie, Miss Carnegie, Yellow Queen, Princess of Wales, Countess of Rosslyn, General Young, Alex. McNab, Mary Lamb, Perfection, Miss Ramsay, Comus, C. W. P. Ramsay, Mary J. White, Alex. Whamond, Village Maid, Lady Lucy Dundas, General Lee, Miss Muir, J. B. Downie, Attraction, Arab, Invincible, Emily Lyall, Miss Watson, Gem, Mrs. Hopkins, Eclat, George Wilson, and Chancellor. Inferior to them in form and substance, but remarkable for their novel colouring, were the Fancy Pansies, consisting of — Oriana, Princess Alice, Colleen Bawn, Earl of Rosslyn, Miss Melville, Cedo Nulli, Jeanette, Maccaroni, Mrs. R. Dean, Belle Lilleoise, Indigo, Striped Queen, and Hugh W. Adair. Mr. Turner, of Slough, had a beautiful stand of Pinks, containing exquisite flowers of Attraction, Beauty of Bath, Lord C. Wellesley, Excellent, Rev. Geo. Jeans, Marion, Device, Charles Waterton, Charles Turner, James Hogg, President, Helen, Cristabel, Blondin, Marguerite, Harlequin, Mary Anne, Prince of Wales, Victory, and Emily. Here is another florists' flower which but few grow in these days of gardening made easy.

Pelargoniums were exhibited in fine condition, but I shall only dwell upon the seedlings, of which there was a large bank, the greater portion being contributed by Mr. Foster, of Clewer Manor. Of these the best were—Sœur de Charité, a bright orange flower, lower petals slightly pencilled, upper petals dark, with bright salmon rose margin; Empress, a salmon rose flower, with a beautiful shade of violet through it, dark blotch, with narrow edge; Joan of Arc, a fine dark flower, reminding one by its name of the first grand march in Pelargoniums, ah! how many years ago, when the old Joan of Arc and Foster's Sylph astonished the world; but what an advance since then! Hermit, carmine lower petals, painted with dark cerise, upper petals black, shaded with dark crimson; Prince Consort, rosy carmine lower petals, medium blotch, the plant of excellent habit, and very free-blooming; and Troubadour, a beautiful salmon-coloured flower, very like Mary Hoyle, but a little more carmine in it, perhaps. Mr. Hoyle had only some yearling plants—Needle Gun, very dark; Patrimony, a large flower of bold appearance; and Miss Hervey, a pretty painted flower. Marksman (Fraser), is sure to make a good market plant, from its habit and profusion of bloom. From what I have seen and heard, the present is likely to be what I do not think last year was—productive of some fine flowers; certainly in last year's group there is nothing so strikingly in advance as Charles Turner and John Hoyle were when they were shown.

There is much more to say, but space fails; and here must end my contribution towards encouraging the growth of florists' flowers by detailing the beauties that shine amongst them.—D., *Deal*.

ROYAL HORTICULTURAL SOCIETY.

Weekly Show, *June 22nd*.—At the Show held this day there was only one exhibitor—namely, Mr. A. Wilkie, gardener, Oak Lodge, Addison Road, Kensington, who took a second prize for a collection of Zonal Pelargoniums, a first prize for a collection of Fuchsias, a first prize for a collection of miscellaneous plants, and an extra prize for another collection of plants, also a first prize for cut flowers. From the gardens of the Society at Chiswick an interesting collection of plants was exhibited, consisting of Raphanus caudatus (the Rat's-tail Radish), Gloxinias, Petunias, Heliotropes, Fuchsias, &c.

HOOPER'S NURSERY, NEW WANDSWORTH.

For evidence that a taste for flowers is rapidly progressing we have only to look around and see what has been done within the last few years; and as regards the neighbourhood of London, it is only necessary to visit Covent Garden Market, and compare the quantity and quality of the supply at present with what it was twenty years ago. If we go towards Clapham, Wandsworth, and Kingston in one direction, to West Drayton in another, to Hornsey in a third, to Norwood, or, in short, if we take any thoroughfare out of London, not only villas but whole streets will be found adorned with a little conservatory or greenhouse attached to each dwelling. In digressing from my immediate subject I take this opportunity of directing attention to the fact, that although some progress has been made in heating by hot water by the tank system, and by gas, nevertheless there is a field open for some ingenious practical gardener to obtain celebrity by devising a simple, economical, and efficacious system of heating the small greenhouses or conservatories attached to dwelling-houses.

Mr. Hooper's nursery is but five minutes' walk from the Clapham Junction station. The grounds are entered from the high road. On the left is the seed-shop, counting-house, &c., and on the right the show-house, containing fine specimens of the following Zonal Pelargoniums:—Beauty, pure white, with small centre spot of rosy salmon, dwarf, compact, and perfect in outline. Conspicuum, carmine salmon, margin white, truss large and compact, rising well above the foliage; abundant bloomer, dwarf habit. Clipper, vivid scarlet, large finely-formed flowers. Dr. Lindley, orange scarlet, clear white eye. Duchess, rosy lake, compact, free. Festoon, centre rose, tinted with delicate blush; flowers of very fine form. Gloire de Nancy, deep rosy carmine, with large and perfectly double flowers. Glow, very large truss, and flowers of fine form and substance; free bloomer, colour rich deep scarlet. Wiltshire Lass, rosy pink, remarkably large flowers and trusses, a valuable variety. Nonsuch, bright salmon, white centre and edges. Rev. H. Dombrain, rich velvety cerise, large well-formed flower and truss, very free. Rosebud, rose, edged with white, well-formed flower.

The main walk from the entrance has a border at each side, 40 yards long and 5 feet wide, planted very tastefully in triangular form with Mrs. Pollock, Lucy Grieve, Lady Cullum, Edward George Henderson, Luna, Goldfinch—the last two

with golden yellow foliage and bronze zones of different shades—and other Zonal and Variegated Pelargoniums; also Calceolarias, Rollisson's Unique Pelargonium, and the newest and best varieties of Verbenas. Mrs. Pollock, Lucy Grieve, and other Pelargoniums were planted out before the severe frost of May, and although they lost a few leaves, they are now growing freely, which will go far to prove that they are not so tender as generally supposed.

In the quarters on each side of the main walk are five acres of nursery stock, consisting of dwarf-trained fruit trees of various sorts, also two large beds of the beautiful Spanish Iris, several beds of border Tulips and other bulbs, Lilies of the Valley, Helleborus niger, and upwards of a thousand Provence Roses well furnished with bloom. The pits contained Camellias and Azaleas, which succeed well placed on a cold bottom. There was also a large collection of Verbenas, mostly the new varieties of 1866. Conspicuous amongst them were Crimson King; Junius, a rich Indian red; Mrs. General Lee, rich magenta, with crimson centre; Rosy Circle, brilliant crimson, tinted with rose, white eye; and Scarlet Nonpareil, soft lake scarlet, with large white eye. Variegated Hollies and other evergreens are propagated extensively in small pots, and in the propagating and other houses are Mrs. Pollock, Lady Cullum, Lucy Grieve, and the other new Zonal and Variegated Pelargoniums. Each cutting is inserted in a thumb-pot, and when rooted (which they are in a week or two with bottom heat), they are shifted into larger pots. I noticed a good Lobelia called Blue King, also Arabis mollis variegata, invaluable for edgings to beds and borders, and very freely increased. The two varieties of Viola cornuta can be seen here.

This nursery has been established only four years; for the last two it has been in the possession of Mr. Hooper, who adds to his stock everything worthy of notice in floriculture.—W. Keane.

VIOLA CORNUTA.

As I wrote to you last year respecting my being disappointed in Viola cornuta, I wish to say a few words now in its favour.

The plants have been in the ground throughout the winter, and are now looking perfectly lovely. From present appearances they will continue to bloom for some weeks. I have a circular bed of about 3 feet in diameter, and it is all covered with beautiful mauve-coloured blossoms, and is not surpassed by anything in my garden. Perhaps it is only equalled in effect by its neighbour bed of Cerastium.

You advised me last season to take cuttings of the Viola. I did so, but they do not bloom so well as the parent plants that have been exposed to the long and severe winter.—A. O., *Exeter*.

GISHURST COMPOUND.

In a wood of nine hundred acres of young Fir trees, only 1, 2, or 3 feet high, I noticed two years ago the presence in numbers of a sort of insect, the name of which I did not know and could not obtain from any one. These insects were then (in 1865), confined to two or three acres, scattered about in the wood in several parcels, and they did some harm, destroying several hundreds of trees. The insects lasted the whole year, notwithstanding the cold and the warm weather.

Last year (1866), I noticed that the insects had much increased, and that they covered twenty or twenty-five acres, also scattered about in the wood in many parcels; and at the end of the year I ascertained that many thousands of trees were destroyed by them.

Finally the Easter of 1867 came, and I saw with terror that, contrary to what had ever been seen in this country, all these insects were still living, although the winter had been very cold and very long, and that the trunks of the trees were literally covered with millions of nests of twenty to thirty eggs each; so that it was to be feared that the whole of the wood might be overwhelmed by them, and millions of trees destroyed.

I tried several applications to kill the insects, but nothing succeeded, or when it really killed the insects it also killed the trees at once. I finally heard of Gishurst compound, and used it in brushing the trunks and dipping the branches. It succeeded admirably, killing immediately the insects without doing any harm to the trees. I determined, although the cost of such work was considerable, to do it all over the twenty or twenty-five acres when it was necessary; but I had nearly done two or three acres, when after some extremely hot days, I was happily prevented continuing the task by the arrival of thousands of small insects, which I think are mealy bugs, and which destroyed in a week all the insects and their nests.—A. B.

CULTIVATION OF THE TOMATO IN COLD FRAMES.

There are some dozen or more varieties, Powell's Early Red we consider the best; it answers well for frame culture.

The experience of the past season has sufficiently shown that we ought not to depend entirely on out-door culture to meet the demand. There may be exceptional cases in favourable localities, but in Scotland generally, from the information I have been able to gather, the Tomato crop may be considered a failure last season.

Where abundance of glass is at disposal, few difficulties attend the profitable cultivation of the Tomato; it will produce abundantly, protected by glass, with or without the aid of artificial heat, if provided with an open exposure. The back wall of a vinery, Peach-house, or orchard-house affords grand scope to its luxuriant growth, from which we sometimes see enormous crops gathered; but in our opinion, cropping in such houses is sometimes carried too far, and we think some restraint should be put on the roots. The necessity of this will at once be manifest when we refer to the gross-feeding nature of the Tomato, and its innumerable rootlets, which spread themselves in all directions, extracting the richer qualities from the soil. To avoid this consumption of what is essential to the proper health and development of the permanent plants, boxes 2 feet square by 8 inches in depth (inside measure), plunged level with the surface and filled with rich soil, would be sufficient accommodation to meet the requirements of the Tomato, with the addition of good waterings of liquid manure from time to time.

In many cases none of the accommodations mentioned are at command, and still the demands for Tomatoes are the same.

Cold frames would assist many out of this difficulty if properly applied. But the question may be urged, Where, in that case, are Pelargoniums, &c., to be grown?—they must be displaced or sacrificed before this can accomplished.

The system we yearly practise with good success is as follows:—In the beginning of February a frame is put in order to receive our first batch of cuttings, early Melons, &c. As soon as the bed is reduced to a proper heat, a sprinkling of Powell's Tomato is sown in a six-inch pot and plunged in the leaves along with the Melons, both getting the same attention on to the time the Tomato requires to be singled out and planted individually in pots 3 inches in diameter. The soil used for this operation has been previously warmed by lying a few days in the hotbed. The plants are returned into heat again, and at the next potting they are shifted into 4½-inch pots, the compost employed being one-third light loam, one-third well-rotted manure, and one-third equal portions sand and leaf mould. The plants are again returned to their old quarters, and are similarly managed for a few weeks more, giving larger shifts when their roots have filled the pots. The last potting ought to take place at the commencement of May, and this time into eight-inch pots, by which time the plants are vigorous and are pointing out their laterals (side shoots). They are again put back to the frame and kept in an active condition till the middle of the month, when they are removed to a dry cool pit, placed on boards, and shaded for a few days until they recover the change.

After-culture.—In the last week of May, the arrangements are completed for their final shift into cold frames in the following manner. A line of boxes is placed at proper distances along both ends, and also the back of the frames, and other lines of boxes are placed running from south to north directly under each rafter. The boxes are plunged level with the surface of the sawdust which covers the bottom. They measure 18 inches long, 15 broad, by 8 deep, and are stiffly filled with a mixture of equal portions of rotten turf and old mushroom-bed dung, chopped well up but not riddled. The plants are next introduced and planted at a distance of 2¾ feet apart along the back and ends, as well as in the boxes placed immediately beneath the rafters. Strong stakes are next placed at convenient distances underneath the rafters to tie the shoots to, making the tops of the stakes press hard against the rafter, while the points are secured in the soil below, which acts as a support, and keeps

them from moving; in like manner stakes are provided for the other plants, to avoid damaging the frames by nailing up the shoots to them. The plants should now be well watered, but ventilated sparingly for a few days, and shaded with mats if the sun is strong. It will now be seen that a considerable space is left vacant between the rows of plants, which will give abundance of room to such plants as Pelargoniums, Fuchsias, Balsams, and the like, the Fuchsias and Balsams being plunged among the sawdust, and the Pelargoniums raised on large pots to a convenient distance from the glass. The frames may thus be well stocked, but not overcrowded, and one finds convenience for many plants that are often neglected.

Training.—Our custom is to allow for each plant one leading shoot, and three on each side, trained fan-shape, which shoots are tied carefully to the upright stakes as they progress, and as soon as each has formed two trusses of flowers, their points are pinched out or back to the eye beyond the last-formed truss, and all other growths are scrupulously cut away. Admit air abundantly throughout all the stages of their growth, but particularly when the flowers begin to expand, until the fruit has formed. As soon as the fruit has attained to the dimensions of Walnuts, the first watering of weak liquid manure is given, at first twice a-week, afterwards in every alternate watering. The eyes left at the last pruning will by this time have grown into shoots; these, and every superfluous growth remaining, should be removed.

After this dressing, if the plants are in a vigorous condition, in a short time they will show themselves very impatient, and if there is still one dormant eye about them it will be forced out, and must be at once cut away. The leaves will also be in vigorous growth, and have expanded to prodigious dimensions, which they may fairly be allowed to do, excepting trimming back any that cover or shade the fruit. As the season advances, the swelling of the fruit will keep pace, and the plants will rapidly extract the moisture from the soil, which necessitates a daily and abundant supply of water, especially in strong sunshine; if the weather prove dull, less will be required.

The subsequent management is merely a repetition of that already given—viz., air abundantly, keep clear of extra growths, trim the leaves that interfere with the fruit, at the same time preserving as many on the plant as possible, tie out the laterals as they advance, sprinkle with pure water overhead after a day's strong sun, and as soon as a general show of colour is visible, discontinue water, and take off the lights, excepting on wet days.

From the above system of treatment we managed to keep up a supply from the end of July until November. with a frame measuring 30 feet long, 10 wide, 4½ high at back wall, and 3 at front wall.—A. Kerr (in *Gardener*).

NEW VARIEGATED PELARGONIUMS AT THE BURY ST. EDMUNDS SHOW.

Permit me to call the attention of your readers to the accompanying letter, which I have received from Mr. John Watson, nurseryman, St. Albans, the raiser of Miss Watson and other fine Tricolor Pelargoniums, proposing sweepstakes of twenty and ten guineas for the best two new Variegated Pelargoniums and the best single new Variegated Pelargonium, to be competed for at the Bury Show:—

"I see that there is a cup of the value of ten guineas offered for the best twelve seedling Variegated Pelargoniums of 1866-67, for which I would be glad to compete; but under the arrangements it is impossible for me to do so, for the simple reason that, as soon as I see a seedling is not likely to be useful I discard it at once. And as to seedling Pelargoniums of this class, I see but little advantage to be derived, either by the public or by private individuals, from exhibiting them in this state, as it is well known among raisers that there is no dependance upon them until their character is established both as to habit and colour.

"The object to be sought is to know who has the best kinds not yet sent out; and the only way to bring out the right kinds is to have a challenge cup, value twenty guineas, to be awarded to the raiser of the best two, and a second cup of the value of ten guineas to the raiser of the one best kind, allowing any raiser to compete for both cups, and no raiser to exhibit less than six plants of each kind. This would plainly show who has the best to send out in the two years to come—1867 and 1868—the plants to be judged according to rules laid down in the gardening papers.

"Now, I shall be willing to subscribe £5 5*s.* towards the above prizes. Will you and your friends contribute the remainder? An appeal through the gardening papers would doubtless be responded to at once, and the desired end would be gained. Of course it is understood that I should be at liberty to compete for both prizes. Let me know as quickly as possible, and I will forward my five guineas by post to you at once.—John Watson."

This spirited challenge deserves the support of your readers. I shall be happy to co-operate in any way—to receive and hold the stakes, and correspond with intending exhibitors. I have accepted Mr. Watson's liberal offer conditionally. If liberally responded to the prizes will be offered; if not, all monies entrusted to me will be promptly returned. I sincerely hope, however, that the challenge will be accepted. Independently of such a competition adding much to the richness of the Bury Show, it would test real merit better than any of the other prizes.

There is much force in Mr. Watson's remarks on the instability of seedlings. However, it is now too late to alter the schedule; but by supporting Mr. Watson's thoroughly practical proposal, growers and the public alike would discover two or three of the very best varieties in existence—a point of the greatest possible moment at the present time, when both are bewildered by hundreds of so-called novelties, either like or inferior to those already in cultivation.—D. T. Fish, *Hardwicke, Bury St. Edmunds, Suffolk.*

PARENTAGE OF CLARKE'S ROSE PINK LORD LYON.

The parentage of Clarke's Rose Pink Lord Lyon, a seedling for forcing, to which a second-class certificate was awarded at the Royal Horticultural Society's Show, is as follows:—

Clarke's Garibaldi is the seed parent of Lord Lyon, Claude is the seed parent of Garibaldi, Anne Boleyn is the seed parent of Claude. The pollen parent was a laced Pink named Sir Robert Grant. Mr. D. Fish counted 110 flower-buds on one plant in my garden on the 8th inst.—James Clarke, *College Street, Bury St. Edmunds.*

TOBACCO TOUCH-PAPER.

"N. E. O." requests me to repeat my mode of making fumigating paper. It is as follows:—

Procure some coarse brown or the coarse blue paper usually employed as the outside wrapping of loaf sugar. Cut the paper into strips about 10 inches or 1 foot wide, and form them into a loose roll, confined so by a piece of string. Now, take an old iron saucepan which is useless for other purposes, and place in it a quarter of a pound of coarse shag tobacco, along with three pints of water. Boil for twenty minutes or so, and then strain the liquor off through an old colander. Return the liquor into the pot along with 2 ozs. of saltpetre, and a pinch or two of flowers of sulphur. As soon as the saltpetre is dissolved and the liquor has again become heated, stand in it the roll of coarse paper, and turn the latter upside down now and then. Continue the pot by the fire to keep the liquid hot till the paper becomes thoroughly saturated, then unroll it so that it may lie flat in a large dish, weighting it down with, say, a couple of pebbles, then pour over it the remainder of the liquor from the saucepan, and let it remain till it is cold. Now, dry the strips of paper in the sun, or by a fire, and to what liquid remains in the dish add double the quantity of water, and syringe it over any tree or plant affected with aphis.

In sick-rooms, or when there is any offensive smell in a sitting-room, a strip of the paper merely lighted and allowed to consume will be found to purify the place like magic, and a quarter of a pound of coarse fresh tobacco distributed evenly over the surface of three pieces of the touch-paper, each about 1 foot long, rolled loosely into the shape of a Pickwick cigar, and kept in that shape by three pins—namely, one at each end, and one in the middle, would prove sufficient to fumigate a small greenhouse for the green fly. When the cigars are to be lighted they can be retained in position by leaning them in small empty flower-pots. Should the tobacco prove too damp to burn freely, light the cigars at bottom instead of at the top. I do not, however, recommend this latter method, as the cigar is apt to burst into a flame, and for the welfare of the plants it should never be allowed to do so. One cigar would be sufficient for a two-light Cucumber or Melon-frame.

Plants too large to be covered by the crinoline contrivance, which has been twice illustrated in these pages, I place in the earth-closet. My latest exploit, only a few days ago, in this way was with two large plants of Coronillas, on the stems and branches of which I observed a few scale insects; a large

Myrtle with a few of another species of scale on the leaves; and two plants of Rollisson's Unique Pelergonium, a favourite sort of mine, though very liable to be attacked by green fly. A cigar in the evening and a good syringing next morning before the sun was allowed to shine upon the plants, have set them free from the pests. The exhausted boiled tobacco should be dried and kept for mild fumigations of delicate plants in flower. —Upwards and Onwards.

PEAR CULTURE.

(*Continued from page* 296.)

Pyramidal Training.—A maiden tree being planted early in autumn, it should be headed back in March to one, or at most two eyes above the place where worked. If, however, it is weak the top should merely be shortened a little, but not so much as to cause the eyes near the ground to break, and in autumn, when established, it must be cut back to one or two eyes above the graft. In spring a strong shoot will push from one or both of the eyes or buds; if there be two shoots, the best is to be retained, and the other removed. That which is retained should be trained upright, and allowed to grow throughout the season untouched as regards pruning.

In autumn the shoot should be cut down to within 13 inches from the ground, cutting above a bud, and not too close to it, for if the winter prove severe the bud next below the cut may be injured: therefore, make the cut not less than a quarter of an inch above the bud intended to furnish the leader, nor more than half an inch above it, and in spring, when the resulting shoot is but a few inches long, the portion left may be cut off closely, in order that the shoot or leader may grow erect. This shoot should be trained upright as a continuation of the stem, and below it other shoots will be produced. These must be under more restraint until the cessation of growth, which will be in September, when the strong should be brought down to the horizontal line, or nearly so, but those that are weak ought to be allowed to remain as they are till they become sufficiently vigorous to be bent down, which will be the case by the autumn or end of summer following that of their production. Although the shoots may not be naturally disposed to form a symmetrical head, much may be done towards securing such by judicious early training. The laterals, if any, which is rare, need not be stopped, unless they interfere with the shoots adjoining, when they may be stopped at the sixth leaf. If this be necessary the tree is sufficiently vigorous to allow of the stopping of the upright when it has grown 13 inches, which should be done before midsummer, or not at all, and unless the tree is exceedingly vigorous, the operation is best deferred until the following year, for the side shoots will be much stronger from the mature than from the immature central shoot or stem.

In November the upright should be pruned 13 inches above the point at which it was last cut; but if very strong, 15 inches, and if weak only 11 inches. This heading-back will cause shoots to push for the second tier of branches. The laterals upon the lower tier of branches should not be stopped in the following summer, as it is hardly possible to have the lower branches too strong; but if the laterals interfere with the shoots above them their points should be taken out at the sixth leaf. When the leader or upright has grown 13 inches its point should be pinched off, but not unless the tree is vigorous; for if weak, it is best to secure the first, second, and third tiers of horizontals being strong and proceeding from the mature wood; as regards those towards the top of the tree, the maturity of the wood is of less consequence. I shall presume that the leader has been pinched at 13 inches above where last headed back. Many shoots will be produced at that height, the uppermost of which is to be trained upright, and allowed to grow during the remainder of the season.

At the winter pruning the upright should be cut back to 13 inches above where it was pinched, and the laterals to within an inch of their base; the side branches, having been depressed and regulated at the previous winter pruning, are not to be shortened unless beyond the bounds essential in forming that cone or pyramid of which I now propose to treat. I shall now dismiss the stem and side branches by simply stating that they are to be reared and originated in future years as in the past, until the height desired be attained, when the leader is to be closely pinched.

The width of a pyramid or cone at its base should be one-third the height of the tree. A tree, therefore, having a height of 6 feet, should measure 2 feet in width at the lower tier of branches. Supposing trees to be planted by the sides of central walks in kitchen gardens in borders not under 4 feet nor exceeding 6 feet in width, the trees in a four-feet-wide border should be a little more than the width of the border apart, or 4½ feet, to allow of access to them on every side; in a five-feet border, 5 feet 9 inches; and in a six-feet border, 7 feet.

I will take it for granted that the border is 4 feet wide, and the trees 4½ feet apart. A tree in such a border will, with two tiers of horizontals from the mature and one from the immature or summer growth, appear as represented in *fig.* 11.

Fig. 11.

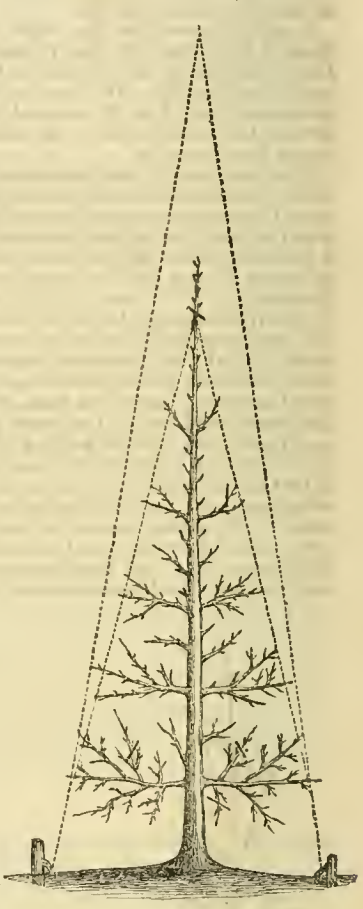


Fig. 12.

The two pegs, *a a*, are intended to be used in tying down the side branches, *b b*, in a horizontal position. A line being strung from *a* to *c*, above the central stem, and 6 feet from the ground, as indicated by the dotted line *a c*, will show the places at which the side branches are to be stopped—namely, where the line crosses them. This stopping should be performed in summer; but as it is most desirable to have the lower branches strong, they should not be stopped until they have exceeded the limits indicated by the dotted lines; and stopping should not be practised until the first tier from the immature wood is taken by stopping the leader.

In the autumn following, the third year of training, the side branches should be cut back, as shown by the bars in *fig.* 11. The knife must in future years not be used except to shorten the central shoot or stem, and to cut the laterals to within a quarter and not more than half an inch of their base. All the side branches should not be first cut close to the dotted lines, for the upper will grow more freely than the lower; the upper, therefore, should be shortened more than the lower—for instance, *b* may be cut at the dotted line, the next tier above at an inch from it, and the third 2 inches, reckoning from the central stem.

The following year the base of the tree should be extended, as shown in *fig.* 12, still taking the line up no higher than before. The dotted lines are intended to show this. Now, the

side shoots, from whatever part produced, are to be stopped at the summer pruning at the lower tier when they reach the dotted line, and so on upwards; and as the side branches will not be numerous enough, they may be allowed to fork; only a proper distance (9 inches), should be allowed between the branches, and none but those required for permanent branches ought to be allowed to extend. Such are necessary to secure and preserve the outline of the pyramid, but all within these must be kept closely pinched. The upper branches will be stronger than the lower; they must, therefore, be restrained by earlier and closer pinching, so as to equalise the sap as much as possible.

It will be seen that the mode of training above recommended is different from that referred to in Vol. XI., page 461. I have acted on the idea that when the cultivator will take the trouble to train his own trees, he should do so in the most handsome form; but the mode of training which I have just described is inapplicable to the majority of trained trees obtained from nurseries.

The great fault of the trees which I have received from nurseries has been their having been originally headed back far too high; the consequence was they were badly furnished with shoots near the base. Sometimes the trees had been headed back at 3 feet from the ground, and were without shoots on one side for a distance of 2 feet from the ground, whilst there were plenty on the other side. This was probably owing to the trees standing so closely together as they do in nursery lines. In other cases the trees were badly furnished with shoots at the base, and those situated there were weak, and consequently the tree could never become so well furnished there as at the upper part, even were the upper branches cut back, and the summer pinching of the shoots produced at the upper part excessive. The case would have been different had the leader been headed back to 12 or 13 inches. They would then have formed trees similar to that represented in *fig.* 13, which is the sort of tree I would recommend, and the only description of tree that ought to be selected. It is only justice to say, that the majority of the trees which I have received from nurseries were well furnished with shoots near their base, in many cases equal to the tree represented by *fig.* 13, and in most little inferior.

Fig. 13.

Fig. 14.

In the case of such trees as those represented in *fig.* 13, 4 or 5 feet in height, formed as shown in *fig.* 12, or bushes of the same height (*fig.* 14), it would be well to head back the leaders at the winter pruning to 13 inches until the height of 6 feet was attained, when the leader should be stopped when it has grown 6 inches, cutting back the after-growth in the autumn to a bud 6 inches above the last stopping, and so on in subsequent years until the required height is attained.

The only other mode of training Pear trees (*fig.* 15), is either the original or a modification of M. Du Breuil's system, the object, it would seem, being to cover the wall or trellis quickly. The trees should be on the Quince stock, maiden plants being eligible for planting. They should be planted 3 feet apart upon a 9-feet, and 2 feet apart upon a 12-feet wall. If planted 3 feet apart they may have three branches, and if at 2 feet two branches, obtained as follows:—

The trees being planted early in autumn may be headed back to two eyes, from which shoots will push. The strongest is to trained upright, and the other cut away. Every encouragement should be given during the summer by watering freely during dry weather, and the tree having made a shoot 3, 4, or 5 feet in length, this should not be cut back in autumn but be brought down to an angle of 45°. In the case of the end trees, the shoot should be taken to the right or left horizontally.

The shoot in the case of all the other trees being brought down to an angle of 45°, will in spring push every eye or bud, and when this is done the branch may be nailed erect, and all the laterals pinched at the sixth leaf, except a strong shoot near the base of the tree, which is to be trained-in to the right or left of the lowest branch, according to the side of the wall which it is required to cover. Neither it nor the leader of the branch must be shortened in summer or autumn, unless one outgrow the other, when the strong may be kept pinched-in during the summer. In autumn they are to be brought down to an angle of 45°, as shown by *fig.* 15, which is intended to represent a 12-feet wall covered in the manner above described. The plan is that of M. Du Breuil, but I have not read his work.

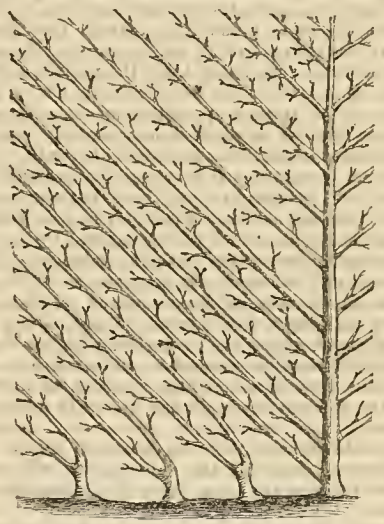


Fig. 15.

The end trees should be planted as many feet, less one, from the end of the wall as the latter is high, but as the shoot will not be of sufficient length the first year to reach to the end of the wall if brought to a horizontal position, it should in the second year be kept at an angle of 45°, a strong leader being insured by closely pinching back the laterals, and in the autumn it may be brought down to the horizontal line, shoot in the following year being trained in diagonally at a foot apart all along the horizontal branch.

Upon a 10-feet wall three branches will be required; the additional branch is to be originated in the same way as the second, and during the third year. The central tree on the wall must be fan-trained. It would be as well to have it and those at the ends of the wall on the Pear stock.

Summer Pruning.—This is the most important operation of fruit-tree culture; for it is evident that if the laterals are not shortened the crop must be small from the vigour of the tree being expended on a quantity of spray, and the fruit must be badly coloured and ripened from its being shaded by the needless crowding of the foliage. It is not the present production only, but the crops of succeeding years that are injured by neglecting to summer-prune; for the crowding of the shoots and foliage prevents the spurs receiving sufficient light and air for their full maturation and perfection. Summer pruning has for its object the maintaining of the tree in order and fertility; it tends to check overluxuriance, prevents the overcrowding of the shoots, secures the formation and perfection of the spurs and fruit-buds, and favours a more full perfection of the fruit.

There is not only some difference of opinion as to the time, but also as to the amount of summer pruning. The time is solely dependant on the season, and the vigour of the trees. The amount of pruning depends on the growth of the trees operated on, for that of some trees is so weak that it may be necessary to encourage it; others are not weak in growth, but are vigorous enough to produce fine fruit; whilst some are so vigorous that the spurs are not nearly so plentiful as the shoots, and the fruit fewer in number than the spurs. Now, to fix any time as the most suitable for summer pruning, and to limit the extent of the pruning to any one rule is impracticable, as it is evident that different trees require different treatment.

All shoots and laterals not required for the extension of the tree, or to fill up vacant space, must be summer-pruned or pinched, whether they spring from the young or old wood; but the leading shoots, or those shoots required for the extension of the tree, should not be pruned, except in the case of pyramidal or bush trees, in which, when the leading shoots make a greater growth than 12 inches, these should have their points pinched at that length. If the trees have covered as much space as is allotted to them, then the leading shoot, and, in fact, all the shoots, should be stopped or pruned in the same manner as the laterals.

Very few trees are so tractable as to produce good crops and require no pruning, or if there are such (as I have had a few instances), the fruit is generally small, and indifferent in quality. In such rare cases, no shortening of the summer shoots being practicable, or at least desirable, any that show themselves should be allowed to grow, and not be stopped until the second week in July, when they may have their points taken off immediately above the sixth leaf, and that is all the pinching they will need.

Trees that are moderately vigorous, or those with shoots not exceeding from 9 to 12 inches in length, should not be pruned until the fourth week in June or first week in July, according to the season, when they should have the points of all the laterals taken out at the sixth leaf, and when they push again, as in all probability they will, take out their points at the third joint above the last stopping, or from the base of the last growth.

Trees that are vigorous, and make shoots when unrestrained of 15 or 18 inches in length, should have the points of the shoots taken off above the fifth leaf, and all growths after the first stopping should be pinched off at the third leaf until the beginning of September, when pinching should cease.

Trees of very strong and rampant growth should be stopped as soon as they have made four leaves, and repeatedly throughout the summer up to September at the third leaf, after the first stopping.

Trees upon the Quince stock may be stopped in all cases one or two joints closer than those on the Pear. The most vigorous shoots will be those at the top of the wall, or where the greatest amount of winter pruning is practised; but, wherever they are, the strongest shoots will of course attain a length fit for pinching sooner, and they ought to be the first stopped or pinched, and in the course of a few days the remaining shoots should be stopped. In all cases, in calculating the number of leaves for stopping, do not count the latent or undeveloped buds at the base of the shoots, of which there are always two or more; only the leaves should be counted, and not the joints or buds.

Any trees with the branches weaker in one part than in another may have the laterals upon the strong branches closely pinched, whilst those upon the weak branches are allowed to grow without stopping until September, when a few inches may be cut from the extremity of each, and these in winter should be cut back to within an inch of their base. In spring a number of shoots will spring from the short stub left. All of them except one should be pinched, that one being left to grow unrestrained until September, when a few inches of its point may be removed, and cut close away at the winter pruning. The shoots pinched throughout the summer should be cut in winter to within 1 inch of their base. We have now a stub two years old, on which fruit-buds are usually produced. It is hardly necessary to add that the short stubby shoots (spurs), with a bunch of leaves, are not to be stopped, for on them fruit-buds form.—G. Abbey.

GYPSUM AS A FERTILISER.

Sulphate of lime, popularly called gypsum, or plaster of Paris, is, in many portions of America, the mineral manure in most general use. As found in the refuse of salt-works, it acquired a local celebrity in some parts of Europe several centuries ago, but the employment of the pulverised rock for agricultural purposes only dates back to about the period of the American Revolution.

Gypsum is a compound of 41.5 parts lime with 58.5 parts sulphuric acid; in its natural state it also contains about twenty per cent. of water.

It is very sparingly soluble in water, requiring 460 grains of water to dissolve a grain of gypsum. This lack of ready solubility would at first thought be considered as objectionable to its use, but really it is a most beneficial property; for if it were dissolved as easily as salt, its benefit to the plant would not be so lasting, and it would require frequent applications to make it productive of much good. Besides this, any mineral salt, although it may be absolutely essential to the growth of the plant, if furnished in too great abundance acts as a poison rather than as food. Now as plants only take in earthy matter when in a state of solution, it is evident that a substance which will afford a lasting rather than an extensive supply will be most advantageous.

The manner in which gypsum acts to increase the productiveness of our fields is a subject on which there have been more discussion and controversy than any other connected with agricultural chemistry; indeed, there have hardly been two writers who have advocated the same theory respecting it. Davy regarded it simply as an essential constituent of the plant, and held that it was not decomposed, but that it entered the plant as gypsum. Liebig holds that its chief use is to fix the ammonia of the air. According to his theory, a double decomposition is effected in the sulphate of lime and the carbonate of ammonia, sulphate of ammonia and carbonate of lime being the result of this decomposition. Hedwig compares the action of gypsum on the food of the plant to the action of the saliva and gastric juice on the food of the animal. That gypsum thrown into stagnant water that contains vegetable and animal substances in a state of decomposition, will cause the production of sulphureted hydrogen, and will also produce a more rapid decay of the vegetable and animal tissues, has often been noticed. To effect this result, it is evident that the sulphuric acid must be decomposed; the oxygen uniting with the carbon of the organic matter to form carbonic acid, and the sulphate combining with the hydrogen.

To apply gypsum with a certainty of producing the best results, requires more theoretical and practical knowledge than does the employment of most manures. Composts, and the solid and liquid excrements of animals, can seldom be used without benefit, whatever be the soil in which they are placed, or the crop it is intended to produce. They are, in a manner, universal fertilisers, from the fact that they contain the essential food of almost every plant. But with gypsum the case is very different. Indeed experience has proved that gypsum of itself is quite inadequate to produce fertility, and that it is only when it acts in conjunction with vegetable manures that its value is most apparent. It is also true that the longer it is used the smaller are the number of crops which are deemed benefited by its application.

It is now well settled that it promotes the formation of woody fibre and adds to the luxuriance of foliage, and that it protracts the period of the growth of the plant, or in other words, delays the time of its maturity. Dust gypsum on half the area of a clover field and the following distinctive results will ordinarily be observed: The leaves will be longer and of darker colour, the stalks more hardy and consequently less liable to lodge, and the period of blossoming will be delayed several days; the number of flowers being comparatively smaller than in that part of the field not so treated.

Now all these results are desirable in the production of clover; particularly are they so when sheep-growers bear testimony to the statement that sheep manifest a preference for, and eat with greater avidity, the clover raised under such circumstances.

On other crops, however, when the object is to produce seeds or fruits, rather than stalks and foliage, the use of this substance would not be desirable; particularly would this be the case where an early harvest is desired. Thus, the use of gypsum has been objected to in the cultivation of Strawberries, for the reason that it tended to the production of Strawberry hay rather than berries.

Too large an amount of it applied to Potatoes, either in the hill or as a top-dressing, has been found to produce a luxuriant growth of tops and comparatively small tubers; but a small quantity placed in the hill or on the sprouts when they are first breaking through the soil, has been found to be highly

beneficial. For the production of Peas and Beans, probably from the large amount of sulphur they require, the use of gypsum is justly celebrated both for improving the quality and increasing the quantity of the product; the same is also true in relation to the culture of the Turnip.—(*Prairie Farmer.*)

THE NEW PEAS.

The Fruit and Vegetable Committee of the Royal Horticultural Society has at last gone thoroughly into the question of the new Peas—a question upon which so much has been written, and so many conflicting statements have been made. No better opportunity could have been found of coming to a satisfactory conclusion on the subject, the trials at Chiswick having this season been in every way most successful, and all the varieties being produced in their best condition.

As regards Dillistone's Early, Carter's First Crop, Sutton's Ringleader, and Veitch's Early, there is no shadow of doubt as to their being all perfectly identical. They bloomed on the same day, or within a day of each other, slatted on the same day, and were fit to gather on the same day. It is a remarkable fact, that some samples of Dillistone's Early, which were obtained from Mr. Dillistone himself, proved to be a spurious and badly mixed stock, resembling Sangster's No. 1, and this will in some measure account for a great deal of the confusion and counter statements that have been made in the discussions relative to this Pea. How such a circumstance has arisen it is for Mr. Dillistone to say, and it is due to the public that some explanation should be given. Some years ago, when this variety was first introduced, it was received perfectly true from a wholesale London house, which was supplied with it by Mr. Dillistone, and singularly enough the sample sent by Mr. Dillistone himself was false. On the representation being made, the following year he sent it perfectly true. If, therefore, any confusion has arisen respecting his Pea, and if in any instances it has been spoken of in depreciating terms, Mr. Dillistone has himself to thank for it.

Dickson's First and Best is a taller grower and produces more haulm than the true Dillistone's, and proves to be a first-class stock of true Sangster's No. 1.

Taber's Perfection is rather stronger in the haulm, and somewhat later by a day or two in filling than Sangster's No. 1.

Young's No. 1 is a first early Pea, 4 feet high, producing more haulm, and about as early as Sangster's No. 1. The ripe seed of last year is rather darker, having a pale olive tinge.

Carter's Improved Emperor is an excellent free-bearing Pea, and is a fine stock of true Sangster's No. 1.

Washington is the same as true Early Emperor.

Carpenter's Express appears to be a run-out mixed stock of early Peas; and the same remark is applicable to Hooper's Early.

London Conqueror is an indifferent second early Pea.

Stanstead No. 1 is identical with Essex Rival; and Essex Rival is one of those pale-podded second or third early Peas, of the class of the old Ringwood Marrow.

Stuart & Mein's Improved No. 1 is identical with Dickson's Favourite, as is also Taber's No. 68.

Sudbury A1 is a white wrinkled Pea, 9 inches to a foot high, and about as early as Sangster's No. 1. This is an excellent Pea.

Dwarf Waterloo is another dwarf Pea, 9 inches to a foot high, a great bearer, producing a fine large pod nearly if not quite as large as the old Waterloo or Victoria, and earlier than Bishop's Long-podded.

Sutton's Long-podded Tom Thumb is wonderfully like the old Spanish Dwarf.

Carter's Improved Tom Thumb is not considered any improvement on the old Tom Thumb.

Mr. Laxton, of Stamford, has been successful in raising some varieties which will prove of high merit, when their characters become fixed. As yet they appear not to have been sufficiently long grown. They were obtained by crossing Laxton's Prolific with Advancer, and it has been found that where these crosses are made the produce from them assume various forms, and it takes two or even three seasons before a permanent character is fixed; and this is done by very close selection. This was so in the case of Dr. Maclean's many seedlings. When they were first raised, they assumed many forms, and for the first two or three years, even from closely selected seed, more than one variety may have been obtained. We look forward with much interest to see more of Mr. Laxton's novelties, and especially that named Alpha, which is an early wrinkled Pea with an immense pod, and as early as Dillistone's. If this keep its present character it will be a treasure.

THE WARATAH, OR NATIVE TULIP TREE OF NEW SOUTH WALES.

The flower called by the aborigines "Waratah," and "Native Tulip" by the colonists of New South Wales, is considered the most beautiful vegetable production indigenous to the colony, and is produced from a stiff, erect and rigid shrub, having the leaves of a hard woody texture, marking the Proteads, to which order the Waratah (Telopea speciosissima, R. Br.), belongs. The leaves are oblong, more or less unequally toothed, and from 4 to 6 or 8 inches in length; dark green, but when just expanding, of a dark red colour. The fruit is a pod containing many winged seeds. The Waratah is indigenous to, and grows luxuriantly and in abundance in the vicinity of Sydney, and other parts of New South Wales, and when first described by botanists was classed with a genus now known as Grevillea, named Embothrium speciosissimum, and figured under that name in Smith's "New Holland Plants," and in Curtis's "Botanical Magazine" (edited by Dr. Sims). It afterwards formed a new genus, called Telopea, derived from telopas (seen at a distance), from its bright crimson blossoms being discernible far off; and those who have had an opportunity of seeing this plant in flower, either wild or cultivated, will readily admit the correctness of this name.

There are some peculiarities of its natural habits and reproduction worthy of notice. The first year the Waratah blossoms it throws out from two to four shoots from each flower-head; in the second year only two, and in subsequent years only one, or more rarely two. To ascertain the way these shoots are produced, it is necessary to procure a flower-head, full-blown or just fading, and on looking closely among the flowers, from one to two or four young shoots will be observed just developing themselves; and these will form the branches of the following year, from each of which a flower-head will most likely be produced. A knowledge of this fact will explain why the plucking of the flowers destroys the new branch, injuring its natural development, keeping the shrub stunted in growth, and preventing its flowering in the ensuing year. The Waratah produces seeds every second year. A tree growing in a garden at Hunter's Hill, in the vicinity of Sydney, five years old, and 10 feet high, produced in 1864 as many as twenty fine heads of flowers at one time, forming a gorgeous sight; and in a tree growing in the Botanic Gardens at Sydney, I observed in the spring of 1865, from one flowering branch produced in the previous year, three stems, each of which was crowned by a magnificent full-blown flower-head.

When a Waratah tree grows in a dense thicket of shrubs, or among creepers by the side of a wall, in the shade, it runs up to a great elevation, a tall slender shrub, seeking the sun's rays; and to obtain light and air previous to developing its blossoms, in several instances, when so situated, the plants have been seen to attain the height of from 10 to 12 feet, or even 15 feet, and then flowering for the first time. In suitable situations, in their wild state, they usually flower when about 4 to 6 feet high, and when at that time stripped of their blossoms, they become stunted, devoid of beauty, and so remain until suckers are thrown up from the roots, by which flowering branches are reproduced. I have also observed that the Rice-paper plant (Tetrapanax papyriferum, C. Koch), only produces branches from the flowering stem; in order to prove it I removed all the panicles of flowers from a young tree flowering for the first time; the result was that the main stem increased in height and developed a new canopy of fine foliage, but no lateral branches were produced as obtained with those permitted to flower as usual. Those desirous of growing the Waratah in perfection, should not permit a flower to be gathered or otherwise destroyed. Many who are aware of the habit of this highly ornamental plant, have some magnificent specimens in their gardens, attracting attention by their rich and brilliant mass of bright crimson blossoms.

The Waratah thrives in a poor sandy soil, well exposed to light and air. The usual time of flowering is in September, (the early spring in New South Wales), and it continues for nearly two months. There are two kinds of flowers,—one the normal state, of a deep, rich crimson, calyx segments tipped

with white. The blossoms when just expanding are of a delicate light pink, a rose colour, gradually changing to a more or less deep crimson hue.—Dr. G. Bennet (in *Journal of Botany*).

NOTES AND GLEANINGS.

The third Great Exhibition of Roses and Congress of Rosarians will this year be held as usual at Brie-Comte-Robert (Seine et Marne). It will commence on the 14th of July, and last for the two following days. Brie-Comte-Robert is the centre of the greatest Rose-growing district of France, and the Exhibition may fairly be expected to be a very fine one, which all English horticulturists who are at the time in Paris should endeavour to see.

—— Exhibitions taking place in the month of July are announced by the following Floral and Horticultural Societies :—

July	1st, 2nd	St. Ann's Nottingham.
„	2nd	Royal Horticultural Rose Show.
„	„	Erewash Valley.
„	„	Wakefield.
„	3rd	Royal Botanic of London.
„	4th	Alton.
„	„	Spalding.
„	4th, 5th	Birmingham Rose Show.
„	5th	Louth.
„	9th	West of England Rose Show.
„	17th	Loughborough.
„	30th	Buckingham.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Special attention must at once be directed to those crops which are to afford the chief supply during the coming winter and spring, planting out *Celery* in its various stages, *Broccoli*, *Cauliflowers*, *Brussels Sprouts*, *Savoys*, *Kale*, &c. The ground from which early *Peas*, early *Potatoes*, early *Beans*, and *Winter Spinach* have been cleared will be suitable for this purpose. Exhausted Strawberry-beds dug after the fruit is gathered, will be excellent as a change for the better Broccolis and Cauliflowers. Deep digging and heavy manuring must be resorted to in all these cases, more especially for the Celery, which cannot be grown tender and crisp without manure and moisture. See that nothing is delayed at this period having a bearing on the supply of the table throughout the coming winter. To this end an extra labourer should be employed by those overpowered by spring business.

FRUIT GARDEN.

The foreright shoots of espalier fruit trees should now be shortened, precisely as directed to be done last week in the case of wall trees. This is the most essential step in a system of pruning, by which those trees may be made to bear from the stem almost to the extremities of the branches. The utility of espaliers, particularly as regards many of the new varieties of Pears, is unquestionable, and the best and cheapest mode of constructing and maintaining their supports deserves consideration. It is now a good time to shorten the shoots of dwarf trees. These trees may be well regulated and judiciously cut within their assigned limits at the winter pruning, but an abundant supply of shoots instead of fruit is the usual result unless the summer pruning is properly attended to. Let a vigorous shoot go on untouched till winter, then cut it back to a few buds, and the general consequence will be the production of three similarly fruitless shoots in the following season, whereas, by shortening such a shoot at the present time, the formation of fruit-buds is almost certain. Therefore, with the exception of some that may be required to fill vacancies, all the shoots of the dwarf-trained Apple, Pear, Plum, and Cherry trees should now be more or less shortened. One-third of their length may be taken off. Those who understand fully the immense importance of thoroughly ripening the wood of all wall trees and espaliers, will pay some attention early in summer to thorough thinning and training. Who can expect Peaches to ripen perfectly when the young wood is dangling from the wall until August?

FLOWER GARDEN.

As soon as the leaves of Tulips, Hyacinths, Narcissuses, &c., have begun to show signs of decay, the bulbs should be at once taken up and placed in an airy situation to dry, and the bed in which they have been growing should have a good soaking of water if they are very dry, and then be dug and replanted immediately. The earliest-planted beds should be kept well watered if the weather be dry. Fill up all vacancies, and cut off dead flowers from Pæonies, Rockets, &c. Sow Brompton Stocks for the last time this year, also Ten-week Stocks for next year. Transplant Sweet Williams and other biennials that are now ready. Hoe and rake borders, and sweep and clean as often as required. Tying-up will be the order of the day generally, all is confusion unless flowers are well staked. A thorough thinning of the shoots of various herbaceous plants should take place previous to the general staking period. A mixed bed will never look well in which gross and overgrown plants infringe on the rights of their weaker but more graceful neighbours. The Ranunculus-beds after blooming, when the grass begins to assume a yellow tinge, ought, if possible, to be protected from rain, as the Ranunculus is extremely apt to emit fresh fibres, and when that is the case, if no worse consequences result, to say the least the next year's bloom is much deteriorated. The seedlings should also be carefully taken up and gradually dried. The main crop of Pink-pipings may now be put in; with common care not one in twenty ought to fail.

GREENHOUSE AND CONSERVATORY.

Many of the plants in the conservatory will, in a majority of cases, be set out of doors; also the principal part of the New Holland plants may be placed in a shady situation in the open air, where they will mature and ripen their growth. In this hardened state they will be much better fitted for winter confinement. The wood of greenhouse plants matured in the open air is less likely to suffer from damp or long confinement than that which has been produced during summer under glass. The juices are much better elaborated; the young wood altogether assumes a firmer and closer texture, and the foliage a more persistent character. These truths are obvious to most growers. Care must be taken that the plants are thoroughly attended to with water, and the worms kept out. Good depths of cinder ashes are efficient for this purpose, yet even these should be lime-watered occasionally. No drainage can be long complete in pots or tubs if liable to the inroads of the earthworm from beneath. Let every attention be paid to young stock of Correas, Epacrises, Polygalas, Ericas, Chorozemas, &c., as regards thorough watering, stopping the gross shoots, and giving them sufficient room, with a free circulation of air, if in-doors. Such of them as are intended for winter flowering should not be shifted after this time. If any Achimenes remain in a state of rest, they may be potted for a late display. Cinerarias from seed should be put into single pots as soon as large enough, and suckers may be taken from the old plants and nursed in a similar way. All Cactaceæ exhausted with flowering should have the old and withered shoots cut completely away, receive liquid manure, and have every encouragement to rapid growth. Pelargoniums should be cut down in due time, before thoroughly exhausted, and cuttings made. The plants should be suffered to become dry in their pots before cutting-in, to prevent bleeding, which exhausts them much. They may be laid on their sides for a week after cutting, if out of doors, to prevent them from becoming wet, and when the young bud has fairly shown itself, they may be disrooted. Put out cuttings of hybrid Roses if firm, and let Chrysanthemums have every attention.

STOVE.

Many of the plants which have been excited, and which are coming into flower, such as Clerodendrons, Gardenias, &c., may be gradually exposed to a lower temperature until they bear with impunity the temperature of the greenhouse, when they may remain some time in flower. When they are done flowering they may be laid upon their sides and kept in a comparatively dry state during the winter, or until they are excited in early spring. Some of the stronger-growing stock, such as Poinsettias, Eranthemums, &c., may be stopped occasionally, in order to keep them bushy, also to produce a degree of succession in the order of their flowering. Attend well to the Euphorbias for winter flowering, more especially the E. jacquiniæflora; a gayer plant does not exist if well grown. They delight in one half fibrous and gritty heath soil, and the other half porous materials, such as charcoal, pounded crocks, small gravel, &c., and the drainage should nearly equal that for Orchids. Clear and weak liquid manure may be given them.—W. Keane.

DOINGS OF THE LAST WEEK.

Until Saturday we had a dull, cheerless week, without a sight of the sun; but now a rising barometer and the dispersion of the hazy clouds give promise of a chance for hay-

making, and a better warming of the ground than it has hitherto received, after which we may surface-stir and pulverise as much as we may. It should not be forgotten that, early in summer, whilst surface-stirring the ground helps to prevent heat and moisture from escaping, it also assists in keeping heat from entering. In sunny days in June we have sometimes found 3° or 4° difference in the temperature at 3 inches below the surface of a hard gravel path and that of earth stirred at the surface, but equally exposed, and in favour of the hard gravel. In the case of tender plants in the flower garden, where the earth temperature is a matter of importance, we have sometimes deferred a little the surface-hoeing of the ground, convinced that though the breaking of the crust to let air into the soil would do good to the plants, it would do more good still if the firm surface had previously been well heated.

KITCHEN GARDEN.

The work was to a great extent a repetition of that of last week as respects surface-hoeing, watering Cauliflowers, Peas, and Beans, pricking out, and thinning Onions, Parsnips, and Carrots. Sowed a bed of the latter for pulling young, also Lettuces and Turnips. Two matters we may notice: For six weeks or two months we had in a Strawberry-pit a rat visit, which annoyed us considerably, as neither poison nor traps would dispose of him or them; but at length a huge rat was trapped. He must have managed to find his way in and out by the openings for ventilation. He did much more mischief by what he cut off and left than what he actually devoured. Even a rat, however, may be blamed for what he does not do. On the morning he was caught we noticed that about a pint of pods had been pulled and partly eaten from a fine row of Tom Thumb Peas at the foot of a wall, and the same rat was blamed for that as well as the Strawberries. Fearing, however, he might have accomplices, we gathered enough for a good dish of the most forward of the Peas, and we were glad we did so, as the next morning from a peck to two pecks were spread along the ground, some of the pods opened and gnawed, and a good many that had Peas not half grown were untouched. This was done though several traps had been carefully set close to the Peas; but for the injury he does we can hardly help admiring the rat, owing to the cunning, the wisdom, perseverance, and forethought which he frequently exhibits. Unless when very hungry or hard pressed, he will not go near a trap or a bait so long as the smell of the human hand will linger near it. Some time ago we detailed how we caught, tarred, and feathered a rat, and for a number of months we were let alone; but now, as the stackyards in the neighbourhood are getting empty, we are threatened with a fresh inroad of an army that will come to no terms of conciliation. They must either be killed or driven away if we wish to enjoy the fruits of our labour.

We have numbers of letters from various parts of the country telling the same tale—that where game is greatly encouraged, where pheasants are fed and reared, there will be sure to be plenty of rats and clouds of sparrows. In a lot of Peas, the garden being more still last Sunday, if one pod was picked by sparrows there was fully a bushel so used, and at a time when every pod was wanted to keep up a regular supply. Under such circumstances the greatest advocates of the feathered tribe need not wonder that we resorted to means to lessen the number of such visitors, even though against our inclination, for we love to see them hopping about and chirruping. One of our favourites, and who seems to like the protection he obtains, is the dishwasher, or water wagtail, one of the most beautiful and useful of British birds, as he picks up the innumerable insects. We thought that the winter had thinned considerably the thrushes and the blackbirds, but as soon as the Cherries and Strawberries are swelling we have whole clouds of them; in fact, without securely netting we never could have fruit of any of these fit for table. What is puzzling and a little irritating is, that whilst we could not leave a Cherry unprotected after it took the second swelling, and long before it was ripe, there are large Cherry trees in meadow orchards within less than a mile of us, close to hamlets, with seemingly nothing to disturb the birds, and there the Cherries will become ripe and scarcely one be nibbled. Last season when, owing to not netting and never firing a gun, scarcely a Pear flower-bud was left on our dwarf trees, at a short distance in village and farm gardens not a bud was touched. The firing of a canister of powder has saved our Pear-buds this season, and the crop consequently will be good. The only trees that suffered from the birds were some early ones that we put some Laurel branches round to protect from the cold; and if we had not removed the branches we would not have had a bud left, as every bird within visiting distance would find out what was beneath these branches, and acted accordingly. On the same principle, if a net is not made secure it will be worse than no netting. The very sight of it sets every thieving bird reconnoitering. We would let them have their share willingly, but when they are satisfied with nothing less than all the crop, it is time to begin to think how we are to be paid for our own labour. Much against our will, we were forced to thin the sparrows a little with potatoes and arsenic beat up together, and put down where no domestic animal or other favourite bird was likely to go near the tempting bait.

FRUIT GARDEN.

Watered some Strawberries, to cause them to finish swelling their fruit in perfection, removed the most of those under glass, and watered trees in pots and Peach and Vine borders with manure water. In going through an orchard-house we noticed that in some bunches of Grapes just set, the little berries, like dust shot, were black at the points, and we feared that some fungus or mildew was paying us a visit, more especially as, owing to the cold and sunless character of the weather, there had been less air given than usual. On closer inspection we found that the dark ugly appearance was owing to the calyces of the flowers clinging to the young fruit, and a gentle application of the hand along the young bunch, and a rather higher temperature, caused the most of them to drop off. A little more heat, and a moister atmosphere when coming into bloom and setting, would have caused the calyx to drop off freely without assistance. Without the slight help given, most likely the berries thus cramped would have failed to have grown or swelled freely. The appearance of these few bunches before being thus acted on, was just as if the points of the berries had been painted with a blue blacking. Notwithstanding the little trouble given, a few of the berries will prove to have been too firmly embraced by the calyx to swell freely afterwards. This appearance took place only on one Vine, and there is more than double enough left, and the manifestation was entirely owing to the want of more heat, to give an additional impetus to vitality to throw off the calyx freely.

Perhaps in no season have there been more complaints of young bunches decaying, shanking-off, or becoming little better than a tendril, from the flowers dropping. When such appearances are not due to the want of reciprocal action between roots and branches, to unripened wood of the previous year, or to bare roots a long way from the surface, they are likely to be produced by a too close and moist atmosphere in the house, and which with many of us is apt to be the case in cold, sunless weather, when we wish to economise fuel, which we must have burnt if we had given much air.

Blotches and scaldings on the leaves are also produced from the same cause, and mildew is likewise to a great extent due to the same fertile source of mischief. Early ventilation, and a little more artificial heat to enable it to be given, would be the best cure for most of these maladies. Painted the pipes in the vinery when pretty cool with flowers of sulphur and water, and to make this paint adhere better, used dissolved soft soap in the water. When the pipes became warm the sulphur and soap smelt rather strongly, and for several nights a little air was left on at the top of the house, even all night, to avoid every possibility of danger. There is no better preventive of mildew, red spider, &c., than keeping a coating of sulphur on the pipes, but it must not be applied to a house where the pipes are hot, without air being given, or it will rust the berries when young. The Black Hamburgh is, perhaps, the most likely to be affected injuriously when in a young state, just out of bloom. Some plants, as Ferns, also suffer from sulphur fumes, especially if the heat in the pipes is above 160°. A little air kept on will make all safe, and the sulphur will be the best antidote to mildew.

ORNAMENTAL DEPARTMENT.

Much has been done in this field of labour, but we have time to advert to only two subjects, in addition to those referred to last week.

With or without bulbs, the flower garden is generally anything but at its best for some weeks after the bedding plants are turned out, and though much may be done with *early annuals*, beds of these, if sown where they are to bloom, prevent due justice and preparation being given to the bedding plants. We have frequently followed a system with early-flowering low-growing annuals, that rendered the flower-beds gay at once, after early bulbs, or without them, and that interfered but little with the welfare of bedding plants in the same beds. The beds were dug and prepared in the usual way, and then were planted in patches, with Nemophilas, Clarkias, &c.

that were either sown in the previous autumn, or in a bed in the following spring, so as to be raised in patches. These patches were far enough apart to permit of the bedding plants being well planted and in their regular places, and the annuals kept up a good appearance of bloom until the bedding plants almost choked them with their advancing growth. Many plants, as Sweet Alyssum, &c., may remain as under-crop or carpeting, and if a few flowers come through the foliage of the bedding plants, it will be an advantage rather than otherwise. If a fine bed of annuals is grown and flowered where sown, the same ground will not do justice to bedding plants, and they will make no great display unless turned out as large plants from pots. The lowest-growing annuals are the best for this early-flowering and partly-carpeting system, and when the annuals are planted out in patches of a good size and a considerable distance apart, every fair chance is given to bedding plants, and the ground is never so much seen after fresh planting.

The second subject is *watering*. The season has been trying to bedding plants turned out early. We did not plant early, and, therefore, lost none from that cause. Some plants, as Amaranthus melancholicus and Iresine, we turned out about the 20th of June, and early enough we found it for the first, though the sun that we have now will make up for all deficiencies. When some of these early-planted bedding plants looked rather badly, they were made much worse in many cases by injudicious watering. When a plant shows signs of distress the water-pail is looked upon as the infallible remedy, when cold rather than dryness is the cause from which they suffer. Would some of our readers just reflect, that the damper they make the soil the colder they make it, they would use water less plentifully. Some of our contemporaries have been telling their readers to soak their bedding plants well, and yet there are complaints that these do not thrive. We should say, that at least up to Saturday we have had no weather that would have warranted giving more water than would just moisten the roots of bedding plants, and the drier the surface of the soil was left all round them the better it would be for them. If freshly planted subjects, whilst the ground was comparatively cold, showed distress at a little bright sunshine, it would be safer to sprinkle the foliage a little instead of deluging the cold soil to insure its being made colder. A very little water at the bottom of each plant is all that has yet been given to our bedding plants, besides the little at planting to settle the earth about the roots, and we would not have given more even had we a river to go to. The plants are as yet all right, and we should not think of deluging the ground with water, or even damping the soil far beyond the extent of the roots, until at least we have had more sun and a higher temperature, that the roots may have warmth as well as moisture.—R. F.

COVENT GARDEN MARKET.—June 26.

All kinds of out-door vegetables are plentiful; and Cherries, Strawberries, and forced fruit are equal to the demand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ..... ½ sieve	3	0	to 4	0	Melons..... each	5	0	to 8	0
Apricots ..... doz	3	0	4	0	Nectarines ..... doz.	10	0	18	0
Cherries ..... box	2	0	3	0	Oranges 100	8	0	14	0
Chestnuts ..... bush.	0	0	0	0	Peaches..... doz.	12	0	24	0
Currants..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	0	0	0	0
Black ..... do.	0	0	0	0	kitchen..... doz.	0	0	0	0
Figs ..... doz.	6	0	10	0	Pine Apples ..... lb.	5	0	8	0
Filberts..... lb.	0	0	0	0	Plums ..... ½ sieve	0	0	0	0
Cobs..... lb.	0	9	1	6	Quinces ..... doz.	0	0	0	0
Gooseberries .. quart	0	4	0	6	Raspberries .....lb.	0	0	0	0
Grapes, Hothouse..lb.	4	0	8	0	Strawberries ..... lb.	0	6	3	0
Lemons 100	8	0	12	0	Walnuts..... bush.	10	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes ..... each	0	3	to 0	6	Leeks ..... bunch	0	3	to 0	4
Asparagus .... bundle	1	6	6	0	Lettuce .... per score	1	0	2	0
Beans, Kidney, per 100	1	0	2	0	Mushrooms .... pottle	1	6	2	0
Scarlet Run. ½ sieve	0	0	0	0	Mustd.& Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions.... per bushel	4	0	5	0
Broccoli ..... bundle	2	0	3	0	Parsley.....per sieve	3	0	4	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsnips ..... doz.	0	9	1	0
Cabbage ..... doz.	1	0	1	6	Peas..... per quart	0	9	1	0
Capsicums..... 100	2	0	3	0	Potatoes ..... bushel	4	0	6	0
Carrots..... bunch	0	6	0	8	Kidney ..... do.	5	0	6	0
Cauliflower ..... doz.	3	0	6	0	New .....lb.	0	3	0	0
Celery ..... bundle	1	0	2	0	Radishes doz. bunches	0	9	1	0
Cucumbers..... each	0	6	1	4	Rhubarb ..... bundle	0	4	0	0
pickling .... doz.	0	0	0	0	Savoys ..... doz.	0	0	0	0
Endive ..... doz.	2	0	0	0	Sea-kale ..... basket	0	0	0	0
Fennel ..... bunch	0	3	0	0	Shallots ..... lb.	0	3	0	0
Garlic ..... lb.	0	3	1	0	Spinach ..... bushel	2	0	3	0
Herbs ..... bunch	0	3	0	0	Tomatoes.... per doz.	3	0	4	0
Horseradish .. bundle	2	6	4	0	Turnips ..... bunch	0	6	0	9

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Orchard-house Management (*C. P.*).—The direction is "W. W.," Holcombe Vicarage, Wellington, Somerset.

Conifer (*J. F., Cornwall*).—Several pages of our Journal would be occupied if we explained intelligibly and usefully the numerous genera of this natural order. We have a volume preparing which will impart the information, and much more than you mention.

Irrigation (*W. Jackson*).—Stephens's "Practical Irrigator" will suit you.

Mr. Hullett's Chinese Sugar Grass (*Hope Deferred*).—We are sorry that you sowed it, and sorry that it has failed, but we cannot aid you. Be wiser in future.

Greenhouse Stages (*Amateur*).—You must be the best judge of how the stage should be altered to suit the plants. Even now you could not well have the front shelf of the stage lower without lowering your platform in front. We consider the stage a very good one for small or fair-sized plants. If your plants are large you could set them farther apart, and even miss one shelf and use the next. A good-sized pot will stand on a shelf 7½ inches wide. We would not wish a better stage for general purposes. It will hold many small plants, and large ones placed more thinly will have all the light possible. If large plants are chiefly desired, a flat table or a stage with fewer and wider shelves would be better.

Training Cucumbers (*Idem*).—It is well not to keep Cucumbers too long in vineries; but we have grown them well there and early on the floor, on a bed, on a trellis, and standing upright trained to a stout rod, and pretty well stumped in, much in the style that Mr. Rivers adopts with his trees in pots. Cucumbers bear well on that plan, but we will give the best advice when we know the case.

Viola cornuta (*R. S. S.*).—The flowers you enclosed are the true Viola cornuta. It is in many old gardens, and being introduced nearly a century since, it is not surprising that it has been in yours a quarter that period. The sand enclosed is quite suitable for potting-purposes.

Removing Roses in July (*W. M. S.*).—As they must be removed, cut all round each of them at once, at 1 foot distance from the stem, by thrusting down a spade the full depth of its blade. Keep them well watered, and remove in July with the balls of earth as unbroken as possible. If to be removed to a distance, each had better be put into a pot fully large enough to receive the ball. After planting keep them well watered and mulched.

Azalea Cuttings (*Jeremiah*).—The cuttings should be taken from the shoots of the current year, selecting those which are moderately strong. When the wood becomes a little hard, or what is known as half ripe, the points of the shoots should be taken off at a sufficient length for cuttings. Cut below the lowest joint which they may have, remove the leaves from the lower part of the cutting, and for half its length; then insert the cuttings up to the leaves in silver sand. The pots may be plunged in a hotbed of from 70° to 75°, with a shaded and close atmosphere. Azaleas unite the two sexes in the same flower.

Embothrium coccineum and Philesia buxifolia Culture (*F. G.*).—The Embothrium requires to be planted against a wall with a south-west aspect, training it against the wall and keeping the shoots moderately thin, and the forerright shoots well stopped during summer. It does well in a compost of turfy peat and loam, with a free admixture of sand. Philesia buxifolia succeeds in a compost of wet bog soil or peat, and should be kept abundantly supplied with water. Free drainage is essential. It is hardy, and so is the Embothrium. They flower freely when of sufficient age, and are to be kept in order by frequently stopping the irregular growths, up to July, when stopping must be discontinued. They are also very tractable as pot plants, if afforded the protection of a cool house in winter, with abundant light and air at all times. The blooming is dependant on the ripening of the wood, it being necessary to secure a good growth, and to have it well ripened by full exposure to light and air.

Acrophyllum venosum Culture (*Idem*).—This plant requires a light and airy situation in a cool house, to be well supplied with water when growing, and at all times to have the soil moist. A compost of two-thirds sandy peat, and one-third turfy loam, with a free admixture of sand, will grow it well. Good drainage is essential, and not less so are light and air plentifully furnished. The plant should be potted in spring after flowering, and may then be cut in as required, to give it a suitable shape. It is not hardy, but requires a house in winter, from which frost is excluded, otherwise it cannot be kept too cool in winter. It is the better of a cold pit or frame in summer. A work such as you mention is being prepared for publication.

Taking up Tea scented Roses in Winter (*Syntax*).—It is desirable to take up the delicate kinds of Tea-scented Roses in autumn, keeping them cool and dry during the winter, and planting out in spring. They must not be kept so warm in winter as to cause them to grow. Any of the florists advertising in this Journal can supply the Violets you require.

Peas Failing (*Young Gardener*).—We can only account for your Peas failing from your watering them excessively. In fact, you say they are sown in deep trenches, as for Celery, putting in plenty of manure. Peas

like good rich soil, but are impatient of boggy soil, such as your trenches filled with manure would be, the subsoil being a yellow clay. An opening made and filled with manure, and this well mixed with the soil, is excellent for summer crops of Peas, but the trench should be filled up to the level of the surrounding ground. When sown in a trench the plants are apt to become earthed too deeply, and the stems rot or decay when watered, or during wet periods. Such we think is the cause of failure in your case, and we can only recommend you to look to the drainage of the soil. Let it be well drained, and we think that with liberal dressings of manure you may grow Peas well, for it is just such a soil as late crops succeed well in. The warts at the roots are quite natural. You will find them on all plants of the Pea family.

Liquid Manure for Caladiums and Achimenes (*A Constant Reader*).—The best liquid manure that we have tried for these plants, and, indeed, for all plants in pots, is that formed by pouring thirty gallons of rain water over one peck of sheep's dung fresh from the pens, and one peck of soot. Stir the whole well up twice a-day for two or three days, allow the liquid to stand a day or two longer, then stir again, and use it for watering with once or twice a-week. 1 lb. of guano in twenty gallons of water, along with half a peck of soot, will form one of the best liquid manures known.

Covering for Vine-border (*Idem*).—A cheap and effectual covering for Vine-borders is felt well pitched and tarred, and sanded, fastened to a frame formed of slater's laths 2 inches by ¾ inch). A number of such frames, each 6 feet long and 3 wide, can soon be made for covering the border, and are easily moved. A covering of tarpauling is also good.

Muscat Hamburgh Vines Mildewed (*Mr. Gough*).—The bunches should not be syringed but be covered with sulphur; this will check the disease—in fact, cure it. In a few days the sulphur may be washed off by syringing with clear soft water. If you find any difficulty in making the sulphur adhere to the berries, you may slightly syringe the bunches, and then apply the sulphur, washing it off in a few days.

Removing Sweet Williams and Dianthuses (*Rose*).—To make room for bedding plants you may take up the Sweet Williams after they have flowered, also the other Dianthuses, with good balls of earth, giving them a good watering previously, and planting them in an open situation. Shade them for a few days, and afford copious supplies of water until established. They should be planted where they are to bloom.

Rose Cuttings (*Rose*).—Cuttings put in immediately after the first flowering is over, or now, will bloom finely next year. They should be inserted in sand in a cold frame, and kept close and shaded until they begin to grow, when they may be taken up and potted. Continue them in the frame until spring, affording air during mild weather, and protection from frost. In spring they may be planted out where they are to bloom.

Summer-pruning Currant and Gooseberry Bushes (*Idem*).—You may now cut back all the laterals or side shoots to three leaves, and take out the points of the terminal shoots. This will give you finer fruit, and if they push again stop or take out their points in like manner at the third joint or leaf above the last stopping. The last stopping should be done in August.

Propagating Golden Balm (*Idem*).—This plant strikes from cuttings as freely, if not more so, than the white-variegated variety; but is not so constant in its variegation. Cuttings put in now in sand in a cold frame, shaded, and kept close, will soon root, and being protected over the winter in a cool house or frame, will furnish a quantity of cuttings in spring. These will strike freely in a gentle heat. You may take up two or three old plants in autumn, wintering them in a cold frame, and by placing them in heat in spring you will be able to obtain a number of cuttings. These if put in in March, or early in April, in heat, will be fit to plant out at the end of May.

Hardy Fuchsias (*South Hants*).—Most, if not all the kinds of Fuchsias, will succeed in sheltered situations and well-drained soils, with a six-inch covering of dry leaves or litter in winter. The following need no protection, but are better with a covering of decayed leaves—Riccartoni, gracilis, corallina, globosa, microphylla alba rosea, and microphylla grandiflora superba.

Summer-pruning Pear Trees (*T. R. Drake*).—See some notes by Mr. Abbey to-day.

Names of Plants (*F. Fencott*).—It seems to be a Melissa, but not being in flower we cannot be certain. Whatever it is, it is of no particular value. (*D. A. B.*).—Selaginella uncinata, Pilea muscosa. (*A Subscriber*).—Auchusa sempervirens. (*Quintin Read*).—1, Nepeta Mussini; 2, Saxifraga ceratophylla. (*W. R. P.*).—1, Clintonia pulchella; 2, Thalictrum aquilegifolium; 3, Spiræa ariæfolia.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 25th.

Date.	Barometer.		Thermometer. Air.		Thermometer. Earth.		Wind.	Rain in inches.	General Remarks.
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 19	30.008	29.966	70	40	60	56	N.E.	.00	Hazy and warm; cloudy; overcast at night.
Thurs. 20	30.033	29.994	65	44	60	57	N.E.	.00	Overcast throughout.
Fri. .. 21	30.099	30.076	66	44	60	57	N.E.	.00	Cloudy; overcast; cloudy at night.
Sat. .. 22	30.124	30.048	72	42	60	57	N.E.	.00	Fine, slight dry haze; fine; overcast.
Sun... 23	29.987	29.932	75	45	60	56	N.E.	.00	Very fine; fine; very fine at night.
Mon... 24	30.025	29.947	70	44	61	58	N.W.	.00	Fine; overcast; fine at night.
Tues.. 25	30.337	30.179	75	42	62	58	N.E.	.00	Clear and dry; very fine throughout.
Mean	30.087	30.019	70.43	43.00	60.43	57.00	..	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GAME FOWL BREEDING THIS SEASON.

I fear that the mortality amongst our young broods this season has been very severe in some localities. Several of my friends here have complained of the serious losses which they have sustained; indeed, my own yard has not escaped a fatal disease which is quite novel to me. I will endeavour to be as minute and particular as to the nature of the complaint and with respect other matters as possible.

My brood stock consists of a fine healthy Black-breasted Red cock, three pullets of my own breeding, and three hens selected from a celebrated yard on the borders of Shropshire (I am informed Shropshire was at one time famed for its excellent breed of Game fowls). These were put early together, and one of the pullets becoming broody in the end of December, I placed nine of her own eggs under her in a warm situation, and as free from intrusion as possible. I am glad to say from these eggs she brought out seven chickens, which were placed as soon as convenient in a room where a fire was occasionally kept. Their food was given frequently, and was varied, consisting of such as boiled eggs chopped and mixed with bread crumbs, bread soaked in milk or ale, potato, pudding, small sound wheat, and grits; indeed, anything that would conduce to their well-doing. They had also shallow boxes containing dry earth often changed, clean fresh water, and, when the ground and weather would allow it, worms were given them. Grass was also given them gathered from the sunniest banks, and where least exposed to the inclement weather. They were also indulged an hour or two each day out of doors in some warm shady place when the weather was favourable; indeed, no effort was spared to raise them, and I am glad to say now, that with the exception of one all are fine, healthy, vigorous birds.

In February, I had two more clutches hatched from the three hens. These were placed in a room devoted entirely to the young broods, and where no fire was kept, but facing the sun. The hens were placed in pens which are ranged longitudinally, and are 2 feet square, each pen having two doors with rounded bars placed 3 inches apart. Clean sweet straw was given them, and fresh supplied when necessary. The floor of the room was covered with dry earth and everything kept scrupulously clean. Feeding and other particulars as before. These all died.

In March I had another clutch from the same hens. These met with the same fate.

In April I obtained a sitting of Game eggs from a friend. These were placed under a broody hen, and at the same time I placed a sitting from my own hens under another hen, and as soon as these were hatched they were taken away a mile from my house, both broods being placed in one room, and every care taken for their well-doing. Strange to say, those from my own hens all died, affected in a similar manner to those before, and those from my friend's are now fine healthy chickens, never having shown the slightest symptoms of the disease.

I will now give you as nearly as possible the particulars of this destructive malady. In some instances all go on well for a fortnight; in other instances the chickens are hurried away in two or three days, the symptoms being (without apparent cause), sudden loss of appetite, violent purging, the motions being of a very acrid glutinous nature, and the vent becoming glued up; the body dry and much attenuated, and then comes the end. I have tried many modes of treatment to save the chickens thus affected but without success, with the exception of two cases. I find warmth and slightly stimulating food the best remedy.

I seldom keep more than a dozen hens, and have only reared one brood of chickens in the same yard before. They have an

unlimited grass run and good water, also a dry soil. I have found that birds by a removal from the country where they were bred, to a distant one have suffered in constitution, and I have also known it to have a contrary effect. For instance, a few years ago I forwarded to a friend in Craven, some forty miles from where I reside, a pen of Game fowls. These birds had been bred in-and-in, and were becoming somewhat small. My friend bred from them, and, singular to say, the produce improved both in bone, size, and stamina. The situation was dry and well sheltered, with good water, and the mineral limestone. It is just possible the hens I have bred with this season have suffered by removal, or they have otherwise had some hidden taint in the constitution.

I have no hesitation in saying, that several of our most choice breeds of poultry have much degenerated in stamina, and to a great extent this deterioration is owing to breeding from stock which has been too freely exhibited, and, consequently, cannot have the health necessary to produce a vigorous progeny.—Yorkshire.

UNPRODUCTIVENESS OF HIGH-PRICED EGGS.

I quite agree with "Veritas," that the sellers of high-priced eggs do themselves more harm than good in supplying eggs that are either stale or insufficiently impregnated. My own experience this season has been somewhat the same as his. About a month ago I sent an order to one of the best poultry establishments for two sittings of eggs. The eggs were received and placed under two proved hens that I had waiting in five days, so that no time was lost. The cost of the two sittings was about 38*s*., all expenses paid; the result, three chicks.

I wrote at once to the house stating the case, and by return of post received a letter expressing regret at my ill-success, but stating that the same number of eggs (twenty-six), had been gathered from the nests that morning, and sent to me, "free of cost." Now, this is what I call liberal and conscientious dealing, and worthy of the imitation of all, and in all trades. I do not feel at liberty to disclose the name of the firm, but will certainly do all I can to recommend it amongst my own friends.

Whilst I am on this subject, I would like the opinion of experienced breeders on this theory expressed by the writer of the above letter, "that unless the birds are well impregnated at the commencement of laying, the whole batch of eggs remain unproductive." Is not this rather far-fetched? I think with "Veritas," it is simply a matter of fresh or stale eggs. I have just had two broods hatched, the one Houdans, in twenty days, the other Crève Cœurs, in between nineteen and twenty days. The eggs were in both cases all laid by my own fowls in one day, and put to hatch at once. I had twenty-five chicks out of the twenty-six eggs. A friend of mine has spent some pounds this season in high-priced eggs, the result has generally been two or three chicks per sitting. Another friend has one cock and twenty-eight hens, all last season's, a mongrel set, but fine birds. He has had about one hundred chicks this month. His losses average ten per cent. on the eggs, and the chicks are healthy and strong.

Some of my friends argue that travelling is detrimental to eggs for hatching. This cannot, I think, hold good with fresh eggs, being perfectly full. A fresh egg cannot be shaken; a stale egg, wasting every day, produces a vacancy, which, of course, gives room for the yolk to be shaken about. My last sitting of last season's, the eggs from London, in the month of August, produced twelve chicks out of thirteen eggs.—A. Le Cheminant, *Foulon Vale, Guernsey*.

I saw in your Journal sittings of Dorking eggs advertised in England, and in March wrote for a sitting, for which I paid, with carriage, 19*s*. They were put immediately on their arrival under a most steady sitting hen, but at the end of the usual period there was not a vestige of a chicken in any of them, and some presented an appearance similar to that of a boiled egg. I am bound to say, however, that from the first sitting of eggs this year from my own birds. I had only one chicken in the lot, and in a second only five. I think, however, where very high prices are paid for eggs, it would be in the interest of dealers, in cases of such total failure, to supply a second sitting—say at half price—not that they should be bound to do so, as, of course, in some cases, they might be exposed to imposition, but where they have reason to believe in the respectability of the party concerned, I think it would be only just to make some allowance of the kind I suggest.—An Irish Subscriber and Sufferer.

MERITS OF HAMBURGHS.

I coincide with all that your correspondent "Toby" says about the Pencilled Hamburgh fowls. If any of the fanciers of the Brahma Pootra, Dorking, or Cochin kinds will keep an accurate account of the quantity of eggs laid in a season, they will find that the Silver-pencilled Hamburghs will throw all the others into the shade. No doubt those fanciers will say the eggs of Hamburghs are small—and they are rather small; but let the eggs for a season be weighed, and a very large balance will then be found on the Hamburgh side.

I well remember one of your correspondents asking, Who ever heard of a Hamburgh fowl laying in the winter? I have had fresh-laid eggs from Hamburgh fowls all through the winter. I have had Silver-pencilled hens laying when nearly naked in the moult, and only stopping for a very short time; whereas my neighbours who have kept the leading kinds they call winter layers have not had an egg, and have come to me for the eggs of my Hamburghs. I have kept all kinds of fowls except the new French ones, and I find that as layers the Hamburghs are the best. Moreover, not one of the four varieties of Hamburghs are such large eaters as most of the large fowls.—E. F. G.

BRIGHTON POULTRY SHOW.

This Show, held in connection with that of the Southern Counties Agricultural Association, commenced on the 24th inst., and will close on the 28th. The entries amounted to about 180 pens of poultry and Pigeons. The following is the prize list:—

Dorkings (Coloured).—First, D. C. Campbell, M.D, Brentwood. Second, J. Clift, Dorking. Highly Commended, C. Cork, New Shoreham, Sussex; J. Lewry, Bolney, Cuckfield. Commended, D. C. Campbell, M.D. *Chickens*.—First, J. Lewry, Bolney, Cuckfield. Second, Messrs. E. & A. Stanford, Ashurst, Hurstpierpoint. Commended, D. C. Campbell, M.D.; Mrs. M. Seamons.

Dorkings (White).—Prize, T. P. Edwards, Lyndhurst, Hants. *Chickens*.—Second, H. Lingwood, Barking, Needham Market, Suffolk.

Game (Black and other Reds).—First, S. Matthew, Stowmarket, Suffolk. Second, S. Dupe, Evercreech, Bath. Highly Commended, H. Gorringe, Southwick Green, Sussex. *Chickens*.—First, J. Jeken, Eltham, Kent. Second, J. H. Rigden, Hove.

Game (Pile, Blue, or Duckwing).—First, S. Matthew. Second, Rev. F. B. Parkes, Rectory, Southwick, Sussex.

Spanish.—First, J. Jenner, Lewes, Sussex. Second, A. Heath, Calne, Wilts. Highly Commended, R. Wright, Holloway Road, London; J. Jenner. Commended, R. Fulton, Deptford. *Chickens*.—First, F. James. Second, J. Jenner.

Cochin-China (Coloured).—First, J. Stephens, Walsall. Second, T. Elam, Southsea, Hants. *Chickens*.—First and Second, F. W. Rust, Hastings.

Cochin-China (White).—First, H. Hobson, Walsall. Second, H. Loe, Isle of Wight.

Brahma Pootras.—First, The Marchioness of Bath, Muntham Court, Worthing. Second, E. Sheerman, Chelmsford. Highly Commended, F. James, Peckham. Commended, E. Sheerman; F. Crook, Forest Hill; Marchioness of Bath. *Chickens*.—First, Mrs. M. Seamons. Second, A. Essery, Kingswood, near Bristol.

Hamburghs (Gold and Silver-pencilled).—First and Second, F. Pittis, jun., Newport, I. W. (Gold and Silver). *Chickens*.—First, H. Pickles, jun., Earby, Skipton, Yorkshire. Second, C. Catt, Brighton (Gold). Commended, C. Havers, The Beacons, Ingatestone, Essex (Silver); C. Catt (Silver).

Hamburghs (Gold and Silver-spangled).—First, withheld. Second, T. Penfold, Newhaven (Silver). *Chickens*.—Prize, H. Pickles, jun.

Polands.—First, D. Mutton, Brighton. Second and Commended, T. P. Edwards.

Game Bantams.—First, F. Pittis, jun. (Duckwings). Second, Rev. G. Raynor, Tonbridge (Black Red). Commended, J. Lamb, Hastings (Black-breasted Red Game). *Chickens*.—Prize, Rev. G. Raynor (Black Red).

Bantams (Any other distinct variety).—*Chickens*.—Second, T. C. Harrison, Beverley Road, Hull (Sebright).

Geese.—First, Mrs. M. Seamons, Hartwell, Aylesbury. Second, Lady M. Macdonald, Woolmer, Liphook, Hants.

Ducks (Aylesbury).—First and Second, Mrs. M. Seamons.

Ducks (Rouen).—First, H. Densett, Pleshey, Chelmsford. Second, F. Parlett, Great Baddow, Chelmsford.

Ducks (Any other distinct variety).—First, W. Stanford, jun., Steyning (Black East Indian). Second, Mrs. H. Wild, East Peckham, Kent (Muscovy).

Turkeys.—First, Marchioness of Bath. Second, Lady M. Macdonald.

PIGEONS.

Carriers.—First, H. Yardley, Birmingham. Second, R. Fulton. Highly Commended, Messrs. Watson, Hove; R. Fulton.

Tumblers (Almond).—First, R. Fulton. Second, F. Else, Westbourne Grove, Bayswater.

Tumblers (Other sorts).—First and Commended, R. Fulton (Short Face). Second, H. Yardley.

Pouters.—First and Second, R. Fulton. Commended, H. Yardley.

Runts.—Prize, H. Yardley.

Jacobins.—First, H. Yardley. Second, J. Percivall.

Fantails —First and Second, H. Yardley.
Owls.—Prize, R. Fulton.
Trumpeters.—First, T. Crunden, jun., Burgess Hill. Second, R. Fulton. Commended, H. Loe.
Barbs.—First, R. Fulton. Second, J. Percivall. Highly Commended, H. Yardley; R. Fulton.
Tumbits.—Prize, H. Yardley.
Nuns.—Prize, H. Yardley.
Archangels.—First and Commended, H. Yardley. Second, J. Percivall.
Any other Distinct Variety.—First, F. Else (Ice Pigeons and Trumpeters). Second, H. Yardley. Commended, H. Yardley; F. Pittis, jun. (Magpies and Swiss).

THORNE POULTRY AND PIGEON SHOW.

At no previous meeting of the Thorne Society has there been so large an entry, nor, as a whole, so good a competition for general quality, as at that held on the 19th inst. This Show has always been very popular—in fact, the great annual event of the neighbourhood; and it has often been remarked that it is quite "a lady show," as well as one for poultry. This year, however, the attendance of the fair sex was very limited, for the day was very unfavourable, rain falling from daybreak. Even under such adverse circumstances the unremitting courtesy and attention of Mr. Richardson, the Honorary Secretary, deserved, and received, the highest praise. The arrangement of the pens was exceedingly good; of fowls alone there was a length in pens of 320 yards, besides which there were other long lines of coops for the Turkeys, Geese, Ducks, Rabbits, and Pigeons.

The *Spanish* classes were most excellent, and, strange to say at this season, they were shown in exceedingly good condition: hence this portion of the Show was very attractive. Mr. J. Thresh, of Bradford, showed some very creditable pens. *Cochins* were good, Buffs taking the first position, but closely pressed by some very superior Partridge-coloured. The Dark *Brahmas* were very good, but little can be said in favour of the Light ones. *Dorkings* were well shown. In the *Game* classes the competition was unusually severe; and Messrs. Aykroyd, Mellor, Julian, Brierley, Hellewell, Chaloner, and Butcher, may well boast of success, the condition of the generality of their birds being perfect. Although only three pens of *Polands* were entered, they were remarkably good. The *Hamburgh* classes, in which there were heavy entries, were also of great merit. The *Game Bantam* class was first-rate, Mr. Crossland, of Wakefield, with only three pens (all Black Reds), taking both prizes and a high commendation. The two hens in the first-prize pen were such as we have not seen for a long time past.

Some splendid specimens of the Mandarin and also the Pintail *Ducks* placed Mr. Harrison, of Hull, at the head in the Extra Duck class. There was a close rivalry as regards both *Pigeons* and *Rabbits*. In *Extra Stock*, a very fine pair of Chinese Silver Pheasants and a Turkey hen busily engaged in attending to a family of thirteen poults, seemed to cause much interest among the visitors.

The Show ground had been very carefully and successfully decorated; and as it naturally possesses great attractions, a bright sunny day would have been the only requisite to have made this year's Show the most successful ever held. We trust that another season better weather may attend this Society's meetings, as the Show is only open a single day—a limitation as to time which is no doubt greatly appreciated by the owners of competing stock, but which sadly limits the receipts if the day prove a rainy one.

Spanish —First, J. Thresh, Bradford. Second, Messrs. Burch & Boulter, Sheffield. Highly Commended, H. Beldon, Bingley; J. Marchant, Halifax.
Cochin-China.—First, H. Beldon. Second, T. M. Derry, Gedney. Highly Commended, W. A. Taylor, Manchester.
Brahma Pootra —First, E. Leech, Rochdale. Second, J. W. Harrison, Spalding.
Dorkings.—First, Mrs. Arkwright, Etwall Hall. Second, H. Beldon. Highly Commended, J. White, Warlaby.
Game (White and Piles).—First, Rev. W. J. Meller, Colwick. Second and Commended, R. Butcher, Cressywell (Piles).
Game (Black-breasted and other Reds).—First, C. W. Brierley, Middleton. Second, G. Hellewell, Walkley. Highly Commended, E. Aykroyd, Bradford; H. Beldon; R. Williamson, Wheatley Bar; D. Gambles, Hatfield; C. Chaloner, Whitewell; J. Laming, Spalding.
Game (Duckwings and other Greys and Blues).—First, Master G. Cocking, Curlew House. Second, H. M. Julian, Hull.
Game (Any variety).—First and Silver Cup, C. Chaloner. Second, E. Aykroyd. Highly Commended, J. Fletcher, Manchester; H. M. Julian; Messrs. Sales & Bentley, Crowle; C. W. Brierley. Commended, C. Chaloner. *Cock.*—First and Silver Cup, H. M. Julian. Second, E. Aykroyd. Highly Commended, Messrs. Sales & Bentley; J. Laming; C. W. Brierley, Middleton. Commended, J. Fletcher.
Poland (Any variety).—First and Second, H. Beldon (Silver-spangled and Blacks). Highly Commended, W. Harvey (Golden-spangled).
Hamburghs (Silver-spangled).—First, H. Beldon. Second, J. A. Taylor, Manchester.
Hamburgh (Golden-spangled).—First, H. Beldon. Second, J. White, Whitley, Netherton. Highly Commended, T. Walker, jun., Denton; W. Wood, Sheffield. Commended, J. A. Taylor.
Hamburgh (Silver-pencilled).—First, H. Beldon. Second, W. Wood.
Hamburgh (Golden-pencilled).—First, W. Wood. Second, H. Beldon. Highly Commended, F. Hollings, Bradford.
Any other Distinct Variety.—First, R. Loft, Woodmansey (Sultans). Second, R. Pashley, Worksop (La Flèche). Highly Commended, Hon. W. G. Eden, Elmfield (Houdans). Commended, P. Winkelman, Gomersal (Houdans); Col. Stuart Wortley, London (Crève Cœurs).
Any Farmyard Cross.—First, R. Loft. Second, G. Robinson, Frodingham, Driffield. Highly Commended, H. Beldon.

Game Bantams (Any breed).—First and Second, Master E. Crossland, Wakefield. Highly Commended, Master E. Crossland; J. Fletcher. Commended, G. L. Curtis, Selby; R. Charlesworth, Manchester; Rev. H. C. Russell, Doncaster.
Bantams (Silver or Golden-laced).—First, Messrs. S. & R. Ashton, Mottram. Second, J. Walker, Halifax. Commended, T. C. Harrison, Hull.
Bantams (Black, White, or any Colour).—First, W. A. Taylor. Second, R. Bentley, Finningley Park. Highly Commended, W. A. Taylor. Commended, J. R. Jessop, Hull (Black).
Single Cock (Any breed).—First, W. A. Taylor (Buff Cochin). Second, H. Beldon. Highly Commended, W. Harvey (Partridge Cochin). Commended, R. Pashley, Worksop (Dark Brahma); Col. Stuart Wortley (Brahma); G. Holmes, Driffield (Golden-spangled Hamburgh). *Hens.*—First, J. Thresh, Bradford (Black Spanish). Second, R. Pashley (Brown Red Game). Highly Commended, H. Beldon (Golden Polands); M. Farrand, Dalton (Black Spanish); W. Harvey (Partridge Cochins). Commended, Mrs. Arkwright (Grey Dorkings); Rev. W. J. Meller (Dark Brahma); Messrs. H. & S. Cooper, Walsall (Spanish); Col. Stuart Wortley (Buff Cochin); Messrs. Burch & Boulter (Spanish). *Cockerel and two Pullets.*—First, Messrs. Burch & Boulter (Spanish). Second, W. Wilkinson, Wath (Black Red Game). Highly Commended, Mrs. J. Newman, Worsborough (Dark Brahmas); W. F. Entwisle, Leeds (Black Red Game Bantams); F. Key, Beverley (Grey Dorkings). Commended, A. Bamford, Middleton (Buff Cochin-China).
Guinea Fowls.—First, T. C. Harrison. Second, H. Merkin, Driffield. Highly Commended, Miss Chester, Dykesmarsh.
Turkeys.—First, E. Leech, Rochdale. Second, H. Merkin. Highly Commended, Rev. W. J. Meller.
Extra Stock.—Commended, Miss Smith, Hatfield (Turkeys).
Geese.—First and Second, J. White (Toulouse). *Gibs.*—First, Mrs. S. Hodgson, Thorne (White). Second, J. Hepworth, Bearswood Green (Grey). Highly Commended, Master J. C. Coalman, Thorne; Miss L. Outwin, Hatfield Parks; C. Haycroft, Thorne.
Ducks (Aylesbury).—First, E. Leech. Second, O. A. Young, Driffield.
Ducks (Any breed).—First and Second, T. C. Harrison. Highly Commended, R. Bentley, Finningley Park.
Extra Stock.—Highly Commended, F. Sales, Crowle (Silver Chinese Pheasants).

RABBITS.

Buck and Doe.—First, Messrs. Hanson & Wagstaff, Thorne. Second, C. Singleton, Thorne. Commended, A. H. Easten, Hull; H. T. Marriott, Wirksworth.
Buck.—First, F. Roberts, Thorne. Second, A. H. Easten. Highly Commended, Messrs. Hanson & Wagstaff; J. Owen, Sheffield. Commended, J. Bradley, Hatfield. *Doe.*—First, R. Dobson, York. Second, Messrs. Hanson & Wagstaff. Commended, J. Mangham, Sheffield; A. O. Young.
For Weight.—First, W. Gant, Doncaster. Second, G. Chester, Thorne. Highly Commended, J. Owen.
Extra Stock.—First and Second, H. Cawood (Himalaya).

PIGEONS.

Carriers.—First, — Newbitt, Epworth. Second, E. Horner, Harewood. Highly Commended, H. Yardley.
Croppers.—First, Master E. Crossland, Wakefield. Second, F. Key. Highly Commended, H. Yardley. Commended, Messrs. Newbitt; T. Burgess, Brighouse.
Tumblers.—First, F. Key. Second, H. Yardley. Highly Commended, H. Cawood; G. Kelsey; C. Gravil, jun. Commended, T. Burgess.
Jacobins.—First and Second, E. Hornes, Harewood. Highly Commended, F. Key. Commended, H. Grant.
Nuns.—First and Second, J. Marshall, Driffield. Commended, H. Yardley.
Trumpeters.—First, E. Horner. Second, S. Robson, Brotherton. Highly Commended, C. Gravil, jun.
Turbits.—First, E. Horner. Second, Messrs. Newbitt. Highly Commended, H. B. B. Laycock, Woodville; J. Marshall, Driffield. Commended, Master E. Crossland; J. Marshall.
Fantails.—First, E. Horner. Second, H. Yardley. Highly Commended, H. Yardley; J. Ellrington, Woodmansey. Commended, Messrs. Newbitt.
Owls.—First, E. Horner. Second, H. B. Laycock. Highly Commended, H. Yardley.
Barbs.—First, E. Horner. Second, E. Brown. Commended, H. Yardley; T. Burgess.
Extra Stock.—Messrs. Newbitt (Fairy Swallows).

The Judges were Mr. Harry Adams, of Beverley, and Mr. Edward Hewitt, of Birmingham.

PROMOTING SWARMING—CONFINING BEES.

I have an old cottage hive which I have been expecting to swarm for the last fortnight. The bees are clustered about the mouth of the hive and hang nearly to the ground, more or less, according to the weather, but they will not swarm. Would it be advisable to sweep them off into a hive, or let them remain to swarm in their usual way?

I had a strong swarm last year which I put into a bar-and-frame hive (straw), which did exceedingly well all summer, and stood the winter; they came out during the few fine days in February, and were very active. The second frost and snow then came, when I put the perforated zinc before the entrance as usual during the snowy weather, but when the snow cleared I found nearly all the bees dead, and how to account for it I know not. They had plenty of honey, and they were well covered up. They stand by the side of a cast I had put into a wooden bar-and-frame hive which was too large for them, so I had to feed, and did not expect them to live, but they are doing exceedingly well. Some of the bees work, and some appear idle. A fortnight ago I took the crown-board off, and

took out some of the side frames, and found many of them sealed up. When I came to the centre one I found some young bees ready to come out of the cells. I did not look for the queen, nor did I take out all the frames, as it appeared to irritate the bees. If I be so fortunate as to have a cast from the old hive, would it be advisable to put them to this hive to strengthen them, or let them remain as they are?

Would you also be pleased to inform me which is the best practical work on bee-keeping?—J. W. G.

[Sweeping the clusters of outlying bees into another hive would do no good, as they would speedily leave it and return to their old domicile. Why not drive all the bees into an empty hive and establish them as an artificial swarm on their old stand; then cut out their combs and appropriate those containing honey, fitting the brood-combs into frames and applying them to strengthening the other stocks?

The colony in the first-mentioned frame hive was weakened by your mistaken kindness in confining the bees during snow, the mortality which ensued being, doubtless, owing to suffocation caused by an accumulation of dead bees in the doorway.

"Bee-keeping for the Many," published at this office, price 4*d.*, free by post for five stamps.]

TRAPPING DRONES.

How can I trap drones at the mouth of the hive? I placed an old stock upon a square box, which the bees have nearly filled. Will there be any danger of the queen being in the box when I take it off? If so, what will be the result?—Baron.

[The Germans trap drones in a wire receptacle attached to the hive's mouth. This receptacle is made of such a mesh as to retain the drones whilst the workers escape, and when filled is plunged into boiling water. The queen is very likely to be in the lower box, to which the seat of breeding may very probably be transferred. In this case the top hive should be removed, but there is a probability of too great a proportion of drone combs being built in the nadir, and this may seriously impair the future prosperity of the colony.]

UNITED SWARMS.

On the 11th inst., I had a first and second swarm (from two separate hives), which I shook into Stewarton-boxes, uniting them together the same evening by drawing the slides. The union was accomplished pretty amicably, only a few dead bees being observable the next morning. For room they were allowed three body boxes of the Stewarton hive, and on the evening of the 12th the two united swarms filled the two top boxes completely. On the 13th they seemed to work very well, and the same evening the two boxes were filled as before. On looking at them this evening, June 14th, I found that only the top box was filled with bees, the second box being completely empty. Am I to conclude that one of the swarms has taken its departure? This morning they seemed busy at work, and I had concluded that all was well, but am now afraid that I have lost one of the swarms.—D. C.

[You need not be uneasy. The desertion of the second box was doubtless owing to a fall in the temperature, causing the bees to cluster more closely together, and, therefore, to occupy a smaller space.]

SWARMS.

On June 10th, a swarm of bees came from one of my two hives, and after flying about in the air some minutes returned to the hive they came from. On the 18th, a swarm came from the same hive, which I secured. To-day (21st), another swarm came off from the same hive, which I also secured. Will you kindly tell me which you consider the first swarm, the one which returned, or that which I first secured? Can you also tell me the cause of the swarm returning, and whether there is likely to be any more swarms from the hive mentioned this season? The super at top is only half full of comb.—A Bee Amateur.

[The queen either remained behind or dropped on the ground and was lost, and, therefore, the bees returned to the hive. The swarm which you secured on the 18th was, we should think, the first. We can offer no opinion as to the probability of a further issue.]

OUR LETTER BOX.

Hatching in an Incubator (*G. M.*).—Eggs do not take longer to hatch in an incubator than under a hen.

The French Fowl Le Brest (*E. H. C.*).—We do not think well of the "Le Brest" fowl—that is, we prefer the other breeds. Of all the French importations, the Houdan is in our opinion the hardiest, and a capital winter layer. The La Flèche and Crève Cœur produce very large eggs, but we have had much trouble with the cocks. They die, or live in a dying state, while the pullets thrive well in the same yard and on the same food.

Young Turkeys Picking their Feet (*J. M.*).—Your Turkeys need something which they have not, or there is something in the soil that adheres to their feet and causes discomfort. Give them some lettuce, and put some brimstone in the water they have to drink.

Dorking Chickens Crooked-breasted (*O. P.*).—We do not think the short time the chickens roost on the sharp rails in the neighbourhood of their haunts would have any effect on their breasts, but sharp or narrow perches in their roosting-places may have much to do with them. We have often noticed that chickens are ambitious to roost where as adults they do not care to do so. There is little doubt that crooked breasts are hereditary in some strains. If, however, you had none last year, and are still breeding from the same stock, it cannot be so in your case. Fast-growing chickens when roosting on narrow perches are obliged to cling closely with their feet; but as they often lack sufficient strength to hold on, they, to avoid see-sawing, rest their breasts on the perch. There is no doubt that, as it is at this age quite cartilaginous, it takes easily the formation of a round and narrow resting-place. Our own chickens, though now good-sized, do not roost in a house. They live out of doors, and at night either get under hayricks or into the rips which they occupied when they were young and smaller. We keep them out of doors as long as possible, but when they are put in houses at night we allow them perches within 2 feet of the ground, and made of fir poles 16 inches in circumference, sawn through the middle, and placed, with the bark on, round side uppermost. It depends much on the competition whether Dorkings with crooked breasts would be successful at a show. If they were very crooked it would be much against them; if only slightly so, and other points were favourable, they would win in spite of it.

Chickens Drooping (*R. C.*).—When your chickens droop feed them on bread and ale. If they are supplied with strongly camphorated water it will do much for them. A pill of camphor the size of a garden pea is beneficial to an adult, while one half the size is a sufficient dose for a chicken. We know no publication now that gives the rules of the pit, or instructions for training cocks. Such things are out of print; but in some parts of the north and north-west they have been correctly handed down from father to son.

Brahma Pootra's Feather (*W. D.*).—The feather you enclosed may have belonged to a perfectly pure Brahma cock, but he was an old bird. We should not impugn the purity of a young bird for such a feather, but we should not keep him. The hen's beak cannot grow again, and when she has reared her brood she should be consigned to the cook. She will do no good, and the trouble her injury causes is all labour thrown away.

Diarrhœa in Chickens.—"I think that bread or toast soaked in port wine is a good remedy for diarrhœa in chickens that are not too young for wet or damp food.—T. D."

Preserving Eggs (*G. S.*).—Take a bread-pan or other pan, put slaked lime into it, till it has enough to allow the eggs to stand upright small end downwards. As soon as the layer is completed, fill up till they are covered and there is an even surface. When you have enough of eggs to make another layer, then put in slaked lime sufficient to be filled up by the eggs you have ready. You may continue till the pan is full. If the eggs are put in fresh you may keep on, and they will be fit for breakfast at any time, and be the same as new-laid eggs. You must recollect, if they are stale when put in this process will not restore them. There are cases we can neither understand nor prescribe for. Yours as regards the Dorking cock may be one of them. You must judge for yourself as regards the Dorking cock. If you have one to take his place, take no more trouble about him—put him in the stock-pot. If you have not, we can only advise you to persevere.

Spanish Cock's Face (*White-faced Spanish*).—Your bird with the white wrinkles grown over his eyes has what is called a cauliflower face. We doubt whether he will recover from his blindness. Wash his face carefully with equal parts of cold water and vinegar. At this time of year the hens often peck the cock's face, and cause the blindness you complain of. Put him by himself, and try the application. Many of the best birds suffer from this and become useless.

Foul Brood (*M. Y. L.*).—This terrible malady is very infectious, and is a disease, not of the bees, but of their brood, which dies in the cells and becomes putrid and offensive, emitting a very disagreeable odour. It can rarely be identified, except in moveable comb hives, until the stocks are dead, when the foul state of the combs makes it evident enough. Its first cause has not been detected, although various hypotheses have been mooted on the subject. A long discussion on foul brood took place in our pages during the autumn of 1863, and continued until the spring of 1864. A graphic description of the ravages committed by this disease in the apiary of "A Devonshire Bee-keeper," and the means by which he finally banished it, will be found in Nos. 121, 122, and 123 of our new series.

Destruction of Drones (*T. R. Drake*).—This premature expulsion of the male element is owing to the failure of the honey harvest, and is therefore unusual at this season. The unfortunate drones have doubtless been denied access to the dwindling stores of food, until, weakened by starvation, they have been entirely banished from the hive.

Honey Harvest (*S. E. V. D.*).—There can, we think, be no doubt that the honey harvest up to the present time has been but scanty. How far bees benefit directly by honeydews is a disputed point. They certainly collect honey in abundance at such times; and we have occasionally, although rarely, seen a bee licking the saccharine deposit from the leaves.

A Book (*A Subscriber*).—Write to Mr. W. J. Pettitt, Snargate Apiary, Dover, enclosing twenty postage stamps with your direction.

Caterpillars of Bombyx cynthia.—*Bromley* wishes to know if these can be fed on mulberry leaves. We never knew them fed on anything but leaves of the Ailanthus.

New York Botanical Garden Library
3 5185 00266 2680